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**AN ANNOTATED CATALOGUE OF THE FLOWERING  
PLANTS OF MISSOURI<sup>1</sup>**

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**PREFACE**

In 1886 Professor S. M. Tracy of the Department of Botany of the University of Missouri compiled and published a list of the native and introduced plants that had been collected or reported as growing spontaneously in the state. This work, entitled 'A Catalogue of the Phaenogamous and Vascular Cryptogamous Plants of Missouri,' listed 1785 species and varieties and constituted at the time a valuable contribution to the botanical knowledge and literature of the state. However, it was far from complete; little collecting had been done in numerous sections, and many of the records were taken from previously compiled lists or from verbal reports of local collectors, some of which proved to be unreliable or at least based upon erroneous determinations of material. For these rea-

<sup>1</sup> An enumeration of "The ferns and fern allies of Missouri," which may be considered supplementary to this catalogue, was published by the authors in the *American Fern Journal* 22: 105-122. 1932.

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(375)

sons, as well as on account of the many changes in nomenclature and in the understanding of species, a considerable number of the plant names found in Professor Tracy's Catalogue do not appear in the present list. The total number of plants now recorded is, however, much larger, due to new discoveries and to the segregation of many species and varieties not recognized at that time.

Since the appearance of the Tracy Catalogue many sections of the state have been made accessible by the building of railroads, electric lines, and more recently of automobile highways, making it possible now for the collector to get into every county, even into the most rugged and thinly settled parts that were quite unexplored botanically at that time. An increasing number of students have become interested in the flora and have coöperated in making it better known through their work in different localities, and a considerable amount of literature, dealing wholly or in part with Missouri plants, has been published, all of which have contributed to a greatly increased knowledge of the state flora.

Perhaps the most noteworthy change has been in the methods of studying plants and in the attitude of students towards them. Fifty years ago plant catalogues and floras generally were little more than lists of species and genera arranged in families, and not much attention was given to plant associations, succession, ecology, or to the causes determining the distribution of plants and the development of floras, some understanding of which opens up one of the most interesting and significant fields of botanical investigation.

In the preface to his 'Catalogue' the only previous publications Tracy mentioned as sources of information were 'A Partial Catalogue of the Plants of Illinois and Missouri,' based upon collections of Mr. Geyer, and published by Dr. Engelmann in 1884; 'The Flora of Jackson County,' by B. F. Bush; and such general works as Gray's 'Manual of Botany,' and the government reports of King and Wheeler. He acknowledged notes, collections, and assistance received from Professor Swallow, State Geologist, Dr. Pech of Louisiana, Mo., Mr. Geyer, Dr. Engelmann, and others of St. Louis, Professor



G. C. Broadhead of Pleasant Hill, Mr. George W. Letterman of Allenton, Mr. B. F. Bush of Independence, Mr. B. T. Galloway of Columbia, and Professor Trelease of Washington University. Only a few other works dealing particularly with the flora of Missouri or containing references to it had appeared up to that time, and the list of other collectors, besides those mentioned by Professor Tracy, was not a long one.

One of the earliest scientific travelers to leave an account of his botanical observations in Missouri was Mr. John Bradbury, an Englishman who traveled extensively in America from 1809 to 1811. In the preface to the account of his journeys, published in Liverpool in 1819, he states that he arrived in St. Louis on December 31, 1809, and during the ensuing year made extensive excursions into the wilderness for a distance of 80 or 100 miles for the purpose of collecting plants. The following year he accompanied an expedition, in company with Thomas Nuttall, up the Missouri River and to the Pacific Northwest. There are references in his 'Journal' to a number of the trees and other plants observed along the river in Missouri, and at the end of the work there is a "Catalogue of some of the more rare and valuable plants discovered in the vicinity of St. Louis or on the Missouri."

It appears to have been the intention of Bradbury to publish a flora or a full list of his botanical collections, but this intention was not carried out for several reasons. Part of his collection was lost or damaged in transit to England, and his travels in America were cut short by the War of 1812. Upon his return to England he discovered that the part of his collection that had arrived safely had been submitted to Mr. Frederick Pursh, who had described a number of the new species in an appendix to his 'Flora Americae Septentrionalis.' Thus Pursh, who had traveled in other parts of North America but who had never been west of the Mississippi River, became the first botanical author to describe plants collected in Missouri.

In 1818 and 1819 Henry R. Schoolcraft made a journey through the almost unexplored Ozark region for the purpose of scientific study. He has left an interesting account of his

adventures and of the country, and although he was more concerned with the geology and other features of the natural history than with the flora, he mentions some of the trees and other plants, and his general description of the country gives us a valuable picture of it at that time.

About the same time Thomas Nuttall set out on his journey to the Arkansas Territory, traveling down the Mississippi to the mouth of the Arkansas River and making notes on some of the plants seen on the way. Nuttall's direct contributions to the study of Missouri botany are not large, but a number of Ozark species extending into the state from the south are mentioned or were first described by him.

Several of the early reports of the State Geological Survey contain references to the flora or give lists of trees and shrubs. B. F. Shumard, G. C. Swallow, and G. C. Broadhead were amongst the early state geologists who paid some attention to the flora, Broadhead collecting many plants in Cass County, where he lived, and in other parts of the state.

Amongst the more important lists of Missouri plants since the publication of Professor Tracy's Catalogue are a 'Catalogue of the Phaenogamous and Vascular Cryptogamous Plants in the Vicinity of St. Louis,' by Henry Eggert, 1891, 'A Manual of the Flora of Jackson County,' by K. K. Mackenzie and B. F. Bush, 1902, 'The Flora of Columbia and Vicinity,' by Francis P. Daniels, 1907, and a recent revision of this plant list by H. W. Rickett, 'A Preliminary Check List of the Cryptogams and Phanerogams in the Vicinity of St. Louis,' by members of the Engelmann Botanical Club, 1911, 'A Catalogue of the Plants of Jasper County,' by E. J. Palmer, 1916, and 'A List of Missouri Trees,' by F. Dunlap, 1929. Besides these there are numerous papers dealing with special families or genera of Missouri plants or with the flora or ecology of local areas, a complete list of which will be found in the bibliography.

In the process of working out the details of the flora of a large and diverse region such as the state of Missouri, it is unavoidable that certain parts should receive more attention or should become known earlier than others. This is partly due to differences in accessibility or nearness to centers of popula-

tion or to institutions of learning, and partly because certain students or collectors study the flora of the particular vicinity in which they live, while that of the rest of the state is investigated only sporadically by itinerant collectors, usually on hasty expeditions.

St. Louis, Jefferson, Franklin, Boone, Jackson, Jasper, and Greene counties seem to be the only ones in the state in which anything like an exhaustive study of the flora has so far been made. In several others extensive collecting has been done and the flora is fairly well known. Amongst these are Clark, Shannon, Dunklin, Butler, Atchison, and McDonald. There has also been considerable exploration in the counties of Ralls, Marion, Pike, Warren, Madison, Iron, St. Francois, Reynolds, Wright, Saline, Stone, Taney, Barry, and Newton, but many of the inconspicuous plants and probably some of the rare ones have never been collected or recorded. The flora of many of the other counties of the state appears to be quite inadequately known. On the whole, much more botanical work has been done in the area south of the Missouri River than in the northern part of the state, partly due to the fact that the Ozark region is more varied and contains many more rare plants. However, the counties to the north of the great river also hold much of botanical interest, and they would certainly repay a more intensive study. It is quite possible that a number of species of which the range is given as central and southern Missouri, because of lack of other records, will be found to extend also into the northern part of the state.

In this catalogue we have attempted to give the range within the state, so far as it is known, for each species, and also to note the type of soil on which it is usually found. The 114 counties of the state have been taken as convenient units for working out the distribution, and these are cited in addition to the general range for many of the less common plants or those confined to certain sections of the state. Common plants that grow in all parts of the state are listed as of general range, and in many cases they can be found in every county.

For the purpose of giving the general geographical range of species the state has been divided into three nearly parallel

zones of different width, which are called northern, central, and southern Missouri. Three zones are also recognized from east to west: eastern, middle, and western Missouri. However, since the east and west boundaries of the state are so irregular, it is not practicable to follow meridian lines, and a sketch map is given to show the general extent of these divisions. County lines are also irregular, and the entire county may be considered as belonging to the division in which the major part of it lies. In the case of a few counties that are approximately evenly divided by these lines, Reynolds and Crawford may be placed with eastern Missouri, Hickory with western Missouri, and St. Louis with central Missouri.

We have endeavored to bring the nomenclature up to date according to the International Rules, and in this we have followed the decisions of the Gray Herbarium for herbaceous plants and that of the Arnold Arboretum for woody species. No complete synonymy is attempted, but to aid the reader in locating unfamiliar names some synonyms are given, and where the name used is one that has not yet appeared in the general manuals, reference is given to the place of publication and in most cases to the name used in the seventh edition of Gray's 'Manual' (G), in the second edition of Britton and Brown's 'Illustrated Flora' (B & B), Rydberg's 'Flora of the Prairies and Plains' issued in 1932 (R), or in Small's 'Manual of the Southeastern Flora' issued in 1933 (S). The abbreviation Rh., which is frequently used, refers to 'Rhodora,' and auth. to author or authors. Other abbreviations for the titles of publications and for geographical names will be obvious, we believe, and most of those used for the names of authors may be found by consulting the list given in the seventh edition of Gray's 'Manual.'

Popular names of plants are of considerable interest both to botanists and laymen and those known generally or locally are given in this catalogue, but it has not been thought worth while to coin names nor to translate scientific ones. Some of the popular names are quite characteristic, and not all of them seem to have found their way into literature. Amongst examples of these are bodarc, chinquapin (oak), yanquapin,





it properly belongs. The Missouri schoolboy or girl is familiar with sheep-sour and tonguegrass, although he might not recognize sheep sorrel and peppergrass. Likewise the thrifty housewife in search of spring greens can tell you the difference between narrow-leaf dock, which is good to eat, and broad-leaf dock, which is bitter, and she knows the excellent qualities of the young sprouts of poke-weed and lamb's quarter (not quarters). The farmer too knows his pursley or "pusley," but only the city chap has heard of purslane. Crab-apple and not crab is the name given to the native species of *Malus*, and the woodsman might sniff at hearing a red haw called a thorn or a hawthorn as quickly as he would at the mention of a brook or a marsh, although he knows all about a branch or a slough. Old-man's-beard and Dutchman's pipe show the whimsical turn of mind, and there is a bit of slightly grim humor in such names as shin oak, beggar's lice, devil's claws, tear-blanket, and wait-a-bit.

The principal sources drawn upon in compiling this catalogue and in working out the distribution of species are, first, the collections in the herbarium of the Missouri Botanical Garden, the Gray Herbarium, the Arnold Arboretum, the National Herbarium for the grasses, and in some cases other public and private collections, including those of the University of Missouri, Columbia, the State Museum collection, Jefferson City, the herbaria, mainly local, of the following colleges: Central Wesleyan College, Warrenton; Cotty College, Nevada; Drury College, Springfield; Hannibal-Lagrange College, Hannibal; Missouri Valley College, Marshall; Park College, Parkville; State Teachers College, Springfield; and William Jewell College, Liberty; second, lists and monographs in which Missouri specimens are cited; and third, the unpublished notes and correspondence of the two authors, supplemented by notes and correspondence from other collectors. Free use has also been made of manuals and general works on botany, and these have been cited only where necessary for the sake of clearness, but a full list of the titles will be found in the bibliography. In addition to our previous work, extending in the case of the senior author over a period of thirty-five years, much intensive col-



lecting has also been done during the progress of this catalogue. In the summer of 1933 the authors spent several weeks together collecting in various parts of the state; and during the past three years the junior author has made several extended tours, visiting many counties where collections were especially needed to complete the records. As a result of these explorations a number of species not previously known in the state have been added to the flora; others have been found to extend into sections where they were not formerly known, and much valuable information has been secured in regard to the distribution and the composition of the flora in the different regions of the state.

There seems to be always a temptation in preparing lists and floras to make them as large as possible, and plants of doubtful occurrence or distinctness are often included. We have endeavored to avoid this error in the present catalogue and to follow a conservative course in admitting species. Many plants that have previously been reported as growing in the state have been omitted because we were unable to find specimens of them or to verify their occurrence. In some of the published lists, especially the earlier ones, species were reported that we now know to be quite foreign to our flora, and these errors in range have been copied repeatedly. It has been necessary to be on guard for such examples, and it is hoped that one result of this catalogue will be to dispose permanently of the report of plants that have been mistakenly included in the state flora.

In preparing the catalogue it has been found necessary to make a number of new combinations in plant names; one new species, three new varieties, and six new forms are also described, and names are proposed for four hybrid oaks. All new names and combinations are by the two authors, except where otherwise stated, as in the genus *Crataegus*, which is treated by the senior author.

While the two authors have cooperated and consulted with each other as fully as possible in the preparation of this catalogue, much of the work has had to be done individually and at two widely separated bases. This has necessitated a certain

division of labor and considerable independent investigation. The introduction and preface are largely the work of the senior author, the latter being in part a summary of an unpublished paper on the origin and distribution of the Ozark flora begun several years previously. He is also responsible for the revision of the genus *Crataegus* and has done most of the work on the other groups of woody plants. Most of the work of examining collections in herbaria other than that of the Arnold Arboretum has devolved upon the junior author, who has checked the large collections of Missouri plants in the herbarium of the Missouri Botanical Garden and has visited numerous other scientific institutions in the state and in other parts of the country, including the Gray Herbarium and the National Herbarium. In the course of this work he has found it necessary to question or change the determinations of many specimens and to eliminate a number of plants that had been credited to the state on misidentified specimens. The compiling of the bibliography of Missouri botany is also largely the work of the junior author.

Due recognition should be given to a number of collectors since the publication of Tracy's Catalogue whose assiduous efforts have contributed much towards extending our knowledge of the flora of Missouri. Amongst these are the late Henry Eggert of St. Louis, and G. W. Letterman of Allenton, who worked out so carefully the flora in the vicinity of St. Louis, as well as doing some work in other parts of the state; Mr. John H. Kellogg of St. Louis, who has carried on their work and extended it into many other counties, including particularly Franklin, Jefferson, Phelps, Texas, and Dent counties; Mr. B. F. Bush, the veteran collector and botanical author of Courtney, who in addition to his long study of the flora of Jackson County, has covered a wide field and done much towards making known the flora of the state; the late Rev. John Davis of Hannibal, who for several years industriously collected the plants of Ralls, Marion, and Pike counties, and also added new records from a number of other counties in the northeastern part of the state; the late Professor E. M. Shepard of Drury College, Springfield, who through his own collections and those of his students, especially Mr. Paul C. Standley

and Mr. J. W. Blankenship, helped make known the flora of Greene and several adjoining Ozark counties; and Dr. H. W. Rickett, Dr. Francis Drouet, and others of the botanical department of the University of Missouri, who are reviving an interest there in a state-wide study of the flora and in reorganizing the herbarium at the University of Missouri. The list might be further extended to include many others who have made local collections or botanical expeditions into various parts of the state.

We wish to express our sincere thanks to Mr. B. F. Bush, who has furnished us many records and specimens for examination. We are under obligation also to the curators and custodians of the botanical collections of the various colleges and museums of the state who have forwarded them to us for examination or placed them at our disposal. Our grateful appreciation is also extended to Mr. C. A. Weatherby, of the Gray Herbarium, for valuable assistance, to Professor Alfred Rehder, Curator of the Herbarium of the Arnold Arboretum, for advice on questions of nomenclature, to Miss Nell C. Horner, Librarian of the Missouri Botanical Garden, for her bibliographic assistance, and to Dr. George T. Moore, Director of the Missouri Botanical Garden, for interest shown in the work and for aid and suggestions.

#### INTRODUCTION

##### LOCATION AND AREA

Missouri lies somewhat east and a little north of the geographical center of the United States. The northern boundary of the state is along parallel  $40^{\circ} 30'$  north; parallel  $36^{\circ} 30'$  north forms most of the southern boundary, but a small section in the southeastern corner extends south to  $36^{\circ}$ . On the east the state is bounded by the irregular course of the Mississippi River, except for a short distance near the northeastern corner, where the Des Moines River separates it from Iowa. About two-thirds of the western boundary is a line running from the southwestern corner of the state to the Missouri River in longitude  $94^{\circ} 38'$  west. North of this, the Missouri River, flowing in a generally southeasterly direction, forms the boundary.

The direct distance from north to south over most of the state is about 300 miles, but the southeastern corner extends 35 miles farther south. It is about 390 miles from the most easterly to the most westerly point in the state, but nowhere is the distance in a direct line so great. At the widest place near the southern border the distance is about 325 miles, while at the narrowest, from just above Hannibal to St. Joseph, it is scarcely 200 miles. It will thus be seen that the state extends farther from east to west than from north to south, although a contrary impression might be gained by a cursory glance at the map.

Compared with the Atlantic coast, the state lies approximately between the latitudes of Newark, N. J., and Norfolk, Va., or between those of Lisbon and Gibraltar in the Old World. The central and north-central parts of California parallel it on the Pacific side. The area of the state is 69,415 square miles, and it is therefore considerably larger than that of the six New England states.

Geographically, Missouri lies in the middle Mississippi valley and on the west bank of the great river. The states of Illinois, Kentucky, and Tennessee lie to the east, Iowa to the north, Nebraska, Kansas, and Oklahoma to the west, and Arkansas to the south. Thus it touches eight states, which is true of only one other state in the union, the neighboring commonwealth of Tennessee.

The state may be broadly described as an undulating plain rising gradually, or abruptly in places, from the Mississippi River towards the west and northwest, where it merges into the Great Plains. This plain is diversified by several pronounced features. On the east is the alluvial and recently formed valley of the Mississippi, varying from a narrow strip of sand and gravel at the foot of rocky cliffs to a maximum width of several miles of flood plain and fertile terraces. And across the state a little north of the center, the Missouri River has carved a similar valley, running irregularly, but mainly from west to east. Many of the larger tributaries of these two great rivers dissect the plain and divide the uplands with a network of alluvial bottoms of varying widths. The greater

part of southern Missouri is occupied by the northern part of the Ozark plateau, which is the most conspicuous and extensive relief feature between the two great mountain systems of the Appalachians and the Cordilleras. North of the Missouri River and west of the Ozark region, the plain is less diversified, and the rolling surface, interrupted only by the usually shallow valleys of the streams, rises gradually and rather uniformly towards the northwest. Finally, in the southeastern corner, abruptly separated from the Ozark plateau, there is a small area of low relief, which is a northward extension of the Coastal plain. Thus, three principal physiographic regions, the Southeastern lowlands, the Ozark region, and the Prairie region, may be recognized in the state, and since the boundaries of the main plant provinces correspond generally with these, it will be worth while to describe them in some detail.

#### ELEVATION AND DRAINAGE

The rise in the elevation of the land surface from the level of the Mississippi River is very irregular. In the Southeastern lowlands the altitude above tide level over most of the area is between 280 and 350 feet, and the generally level surface is relieved by only one slight elevation along Crowleys Ridge, in Dunklin, Stoddard, and Scott counties. This reaches a maximum height of about 450 feet. In the Ozark region the rise is generally abrupt, and the river, except sometimes for a narrow strip of valley, is bordered by precipitous bluffs. In the Iron Mountain sub-region, about 75 miles west of the river, the surface rises in many places to over 1,000 feet above tide level, and the altitude of the highest points at Tom Sauk and Wild Cat Mountains is approximately 1,800 feet. Most of the area of the Ozark uplands farther west has an elevation of between 1,000 and 1,300 feet and it reaches a maximum of slightly over 1,700 feet in Wright County. On the northern and northwestern sides there is a gradual falling off towards the valleys of the Missouri and Osage rivers. Between these two streams a local area in Morgan County again rises to over 1,000 feet, and in Barry County, near the southwestern corner of the state, the highlands reach an altitude of over 1,500 feet. In the



Prairie region, north of the Missouri, the altitude rises from about 600 feet in St. Charles County to a little over 1,200 feet at the northwestern corner of the state.

The drainage of the entire state is into the Mississippi-Missouri River system, but the considerable differences in elevation and in the hardness and strike of the underlying rocks, and other features of its complex topography have caused the tributary streams to run in various and sometimes circuitous directions before reaching the great rivers. In the northern part of the state the general direction of the streams is southward into the Missouri River, except along the eastern quarter, where they flow mostly southeast into the Mississippi. Most of the streams of the Prairie region are slow-flowing or somewhat sluggish, and in very few places have they developed bluffs or banks more than a few feet high. This is due to the generally soft character of the formations through which they have worn their channels, which is usually glacial drift or Pennsylvanian sandstones and shales. None of the streams in this part of the state attain much size, the largest being the Grand and Chariton rivers.

South of the Missouri River, the drainage from the Ozark plateau, where nearly all of the streams have their sources, is in various directions. In the southeastern part and to beyond the center of the state along the southern border, most of them have a generally southerly course. The St. Francis, Black River, Current River, and the North Fork of White River are the most important streams in this area.

Along the northern side of the plateau the Meramec flows northeast, east, and finally southeast before reaching the Mississippi; the Gasconade and its tributaries flow north and northeast into the Missouri, and the Osage, the largest tributary of that river in the state, flows in a circuitous course, in the main eastward and along the northern side of the plateau, before joining it a little east of the center of the state. In its eastward course the Osage captures a number of north-flowing streams.

White River, one of the larger tributaries of the Mississippi, which has its sources in the Boston Mountains of western



Arkansas, through a great curve to the north flows for a short distance through southern Missouri, in Barry, Stone, and Taney counties, before again turning southeast to cut its narrow valley through some of the most rugged parts of the southern Ozarks, and finally to emerge into the broad lowlands and to join the Mississippi far to the south in Arkansas. In Missouri it receives one large tributary, the James River, and several smaller ones from the north. The influence of this stream on the flora is very great, as it seems to have been the gateway by which many plants from the southwest and others from the southeast have entered.

In the southwestern corner, in the counties of McDonald, Newton, Jasper, and the southern part of Barton, the drainage is westward through Spring River, Shoal Creek, and Elk River, which join the Neosho farther west; and through that stream their waters find their way into the Arkansas and finally into the Mississippi. The direction of these streams has also had an influence on the flora, which is evident in the presence of many species from the Southwest in the area which they drain.

Many of the Ozark streams have their sources in large springs, and the majority are fed by springs along their courses. Most of them are perennial, but often when not at flood stage the water may disappear under the beds of coarse gravel and boulders for some distance, only to emerge again where a ledge of solid rock comes to the surface. Usually they are swift-flowing and subject to rapid rises, sometimes with disastrous results after heavy rains. Only the larger ones have reached the stage of forming alluvial valleys. These are usually bounded by precipitous bluffs, and on one side or other of the valley the stream in its meanderings will often closely approach one of these. Narrow V-shaped valleys and cañons are common along the smaller streams in the more rugged parts of the region, and these, as well as the high bluffs, afford protection to many rare plants, which are generally species of northern range or of the southern Appalachians, although in some situations they are plants of southwestern distribution. The meandering courses of many of the Ozark streams, and sometimes their general direction for considerable distances,

seem to have been influenced or determined by differences in the hardness of the rocks, or by the structure and pitch of the strata through which they have cut their channels, and in some cases there is evidence that their original courses have been much changed or reversed by geological forces during the last cycle of elevation of the region.

All the streams that flow through the Southeastern lowlands have their sources in the Ozark plateau, but in their lower courses they are sluggish, with scarcely defined valleys, and they are often bordered with wide swampy areas. Ox-bow bends and shallow bayous, sometimes widening into shallow lakes, are frequent along their courses, and before the present system of artificial drainage was inaugurated, in times of flood their waters spread over almost all of the area, often rising to a height of two or three feet on the trunks of the forest trees. Such conditions naturally had a marked effect upon the flora, completely inhibiting many species and restricting others to the low ridges and knolls, while favoring aquatic and palustral plants, which formed a large percentage of the flora.

#### CLIMATE

The climate of Missouri, like that of all the central Mississippi Valley, is marked by great extremes and is subject to sudden changes of temperature. Cyclonic storms and occasionally destructive tornadoes, the latter generally very local, occur throughout the spring and summer months. These sometimes terminate periods of extreme heat and humidity, and are followed by longer intervals of mild pleasant weather. The storms are frequently attended by electrical discharges and by rain, which falls in torrential quantities; and there is sometimes also hail, that may do great damage over limited areas. The winters are generally mild and open for the most part, but they are interrupted by occasional severe storms or "blizzards" that originate in high altitudes and sweep down across the plains, bringing sudden drops of temperature, sometimes of 30° or 40° or more in a few hours. The total annual rainfall averages from 40 to 45 inches over the southern part of the state, and it diminishes to 30 or 35 inches in the northwestern

part. However, it is often too unevenly distributed throughout the season to be of the greatest value to plant life. Most of it falls during the spring and early summer months, and there is sometimes a short rainy season in September or October; but protracted droughts, that often occur in the late summer and sometimes earlier, have a destructive or limiting effect upon many plants. And this is one of the causes for the absence of some species found in similar or more northern latitudes nearer to the coast or where more equable conditions prevail.

The direction of the winds is quite variable. In the spring and summer the prevailing direction is from the south and west, and in the autumn or winter it is often from the north or northwest. Although the severe winter storms come from these directions, the west and northwest winds of summer are often hot and dry and at other times storm-laden, while those from the south, which originate in the Gulf-Caribbean cyclone center, because of the distance and the altitude at which they travel, are usually cool and refreshing. The east winds of spring and early summer are frequently chilly and damp. In the spring and fall months the winds are often strong and blow steadily, sometimes for several days.

The winds influence the flora in several ways. As carriers of moisture or as agents in its evaporation, their effects are most important. The strong dry winds are at least one of the factors that have prevented the spread of forests and have kept the western plains and prairies as open grass lands. They are also an important agency in the transportation of seeds, and as an erosive force and as carriers of soil, dust, and sand, their effect, though not so conspicuous as in drier or more sandy regions, is by no means negligible. The generally small size and stocky character of the trees on open uplands is at least in part due to the strong winds.

The winter and early spring blizzards are generally accompanied by snow or sleet. The amount of snowfall varies greatly in different years. Some winters pass with only a few light snows, aggregating not more than two or three inches in thickness, while at rare intervals there may be a season in which there are repeated falls, and in small areas in more

northern parts a maximum of two or three feet on the level is sometimes formed. Memory of such exceptional seasons gives rise to the popular belief in a changing climate and to the tradition of the "old-fashioned" winters. Snows generally melt rapidly, but when they remain on the ground for some time they have a favorable influence upon vegetation, especially upon grasses and herbaceous plants. One of the most unfavorable climatic influences upon the flora in Missouri is the comparatively late dates at which killing frosts occur. Sometimes these come as late as the first week in May, and their effect then upon tender plants is most disastrous, often destroying the fruit or the entire plant for the season and in some cases killing them outright. This has probably been one of the most effective barriers to the northward spread of many tender or less hardy species.

The influence of climate upon the vegetation is very great, and climatic conditions operating in the past have doubtless been one of the principal factors in determining the present composition of our flora. Rich and varied as the flora of Missouri is, its diversity is due largely to other causes, such as the variety of soils, drainage, exposures, or protection afforded in different localities. For it is the extremes of moisture and temperature and not the averages that affect tender plants and work destruction upon them, and the temperatures occasionally recorded in Missouri winters are lower than those on the Atlantic coast far up into New England. The long severe droughts also prevent the spread of many mesophytic or hydrophytic species, limiting them to restricted areas or entirely excluding them from the region. Also the torrential rains and resulting floods in the stream valleys cause rapid erosion on steep slopes and prevent the accumulation of soil in rocky areas, as well as submerging large tracts of lowlands for considerable periods.

The following tables showing the average and the maximum and minimum temperature and rainfall by months, taken from the records of the United States Weather Bureau, will illustrate some of the extremes of climate in Missouri.

CLIMATE OF COLUMBIA, BOONE COUNTY, MISSOURI  
(41 YEARS' RECORD)\*

Elevation above sea level 784 feet.

MONTH	Mean temp. F.°	Mean max. F.°	Mean min. F.°	Mean rainfall inches	Average snowfall inches	Prevailing winds from
December	33	42	24	1.86	3.8	SW
January	29	39	20	1.92	5.3	S
February	32	41	22	2.04	6.0	NW
Winter	31	41	22	5.82	15.1	SW
March	43	54	33	2.94	3.7	S
April	55	65	44	3.77	0.5	S
May	64	75	53	4.46	T	S
Spring	54	65	43	11.17	4.2	S
June	73	83	62	4.76	0	S
July	77	88	66	3.49	0	S
August	76	87	65	3.60	0	S
Summer	75	86	64	11.85	0	S
September	68	80	58	4.35	0	SE
October	57	69	46	2.61	0.1	S
November	43	54	34	2.20	1.0	S
Autumn	56	68	46	9.16	1.1	S
YEAR	54	65	44	38.00	20.4	S

Highest temperature in 41 years, 111; lowest in 41 years, -26.

Average date last killing frost in spring, April 13.

Average date first killing frost in autumn, October 18.

Latest date killing frost in spring, May 9.

Earliest killing frost in autumn, September 18.

Average length growing season (K-frost to K-frost), 188 days.

Average annual number of days with 0.01 inch rain or more, 113.

Average number days 0.01 inch or more rain, April to September, 64.

The wettest year of record, 1892, with 54.62 inches.

The driest year of record 1901, with 21.35 inches.

The wettest single month, June, 1928, with 14.86 inches.

The driest single month, August, 1909, with 0.06 inch.

Average wind velocity, January 9 miles; February 10 miles; March 10 miles;

April 10 miles; May 8 miles; June 7 miles; July 7 miles; August 7 miles;

September 7 miles; October 8 miles; November 9 miles; December 9 miles.

Annual 8.

Wind velocities of 32 miles per hour or more, about 2 a year.

Wind velocities of 47 miles per hour or over, about 1 in 10 years.

Highest velocity ever recorded for a period of 5 minutes, 50 miles. Extreme velocity for one minute, 57 miles per hour.

The greatest known depth frost penetrated the ground, 36 inches.

Authority for ground frost penetration city engineers, grave diggers, and telephone-hole diggers.

\* Furnished by the United States Weather Bureau Office.



## GEOLOGY AND TOPOGRAPHY

Since plants grow in and are entirely dependent upon the soils, it is important to consider them and the rock formations from which they are derived in a general study of the flora. Moreover, clues to many perplexing facts in regard to the present distribution of native plants can often be found only in the past geological history of the region as well as in a study of its present topography and ecology.

All of the state of Missouri, with the exception of the Southeastern lowlands, has been above sea level since late Paleozoic time. Parts of the Ozark region are amongst the oldest lands on the continent, the Archaean and Algonkian rocks of the Iron Mountain sub-region having been a part of the original land axis of North America. The Iron and St. Francois Mountains in the southeastern part of the state are remnants of an old system, the peaks of which doubtless once stood much higher than they do at present, and the granitic and porphyritic rocks of which they are composed have during ages of erosion furnished material for the formation of the sedimentary beds which were later laid down in the seas about their bases. They may at one time have been entirely submerged and buried by sediments from higher land areas, and they are now in the process of being excavated by erosion. About this nucleus, beds of sandstones, limestones, and dolomites, and less generally of shales and conglomerates, were being formed in concentric bands and in overlapping layers down to the close of the Carboniferous or the beginning of the Permian period, when the whole region was gradually uplifted above sea level.

Although no traces of them now remain, we can safely assume that the earliest forms of land plants once occupied this region, and that the whole long pageant of the development of plant life has passed in review here. The luxuriant fern forests of the Coal period flourished in the lowlands and marshes bordering the seas, as the abundant fossil relics found in many places bear witness, and as the higher classes of flowering plants appeared at least in the Cretaceous and succeeding ages they found in the Ozark region a land surface already old



and with a diversity of soils and ecological conditions suited to a varied flora. So our present flora has an ancient lineage, and there is reason to believe that many of the rarer plants found isolated in parts of the region may have survived from remote times.

During the Cambrian and Ordovician periods most of the present area of Missouri was covered by seas of varying depths. Thick beds of magnesian limestone or dolomite were deposited in the deep seas and sandstones nearer the shores. These deposits now lie deeply buried under later strata over most of the state, but they come to the surface over much of the Ozark region. Narrow belts of Silurian and Devonian limestones and shales are found along the eastern and northeastern sides of the present Ozark plateau, and more locally to the west and southwest, but most of the region seems to have been a land surface during those times. Stratified rocks of the Mississippian series, mostly pure limestones with interbedded chert and some more local beds of sandstone and shale, also encircle the Ozark plateau in a wider belt, coming to the surface over considerable areas in northeastern Missouri and in the west-central and southwestern parts of the state. Farther north, as well as west, and eastward beyond the borders of the state, they are buried beneath the sandstones and shales of the Pennsylvanian series. The shallow seas of the late Carboniferous period probably at one time covered nearly the entire state, as outlying areas of the rock deposits are found in many parts of the Ozark region, though in most places they have been removed by subsequent erosion. But over most of northern Missouri and south of the Missouri River on the western side of the state they come to the surface, except where buried under transported glacial material. Limestones formed in the more open seas at this time are also found in some places.

Nearly all of Missouri was a land surface undergoing erosion through the middle ages (Mesozoic) of geologic time, although there were probably considerable changes of level during the late Cretaceous, when igneous rocks were being thrust up in the Ouachita Mountain region of central Arkansas. At that

time the waters of the Gulf of Mexico came up to the southeastern border of the present Ozark region, and deposits made along the shores come to the surface in Scott and Stoddard counties in parts of Crowleys Ridge in the southeastern Missouri lowlands.<sup>2</sup> The upward movement of land surfaces at that time probably affected the drainage of the entire region and changed the directions of many streams. The upper Mississippi River may not have assumed its present course until about this time.<sup>3</sup>

The Mississippi Embayment of southeastern Missouri remained until a much later time, at least until the last elevation of the Ozark region, towards the close of the Tertiary period. The Southeastern lowlands now occupy the area of this old embayment. Prior to this time the surface of the Ozark uplands was being worn down until most of the region was reduced to a low, comparatively level plain, with sluggish streams and probably large areas of swamps, covered with a forest in many respects similar to that which now occupies the Southeastern lowlands. The probably slow and long-continued movement that again elevated the region resulted in a rejuvenation of the streams, which, because of the steep grades, began cutting new valleys and producing the rough topography that is now found especially along the steep slopes of the dome.

The cold climate and the several southward movements of the polar ice sheets during the Pleistocene period must have profoundly affected the flora of the entire northern and central United States. In Missouri during the Kansan epoch, one of the earliest advances of the ice, the ice sheet covered a large part of what is now the Prairie region north of the Missouri River, bringing down from the north great quantities of gravel and boulders, mostly of igneous and metamorphic rocks such as are not found in place nearer than Minnesota, the Dakotas, and Canada. As the ice melted and retreated the region it had

<sup>2</sup> Matthes, F. E. Cretaceous sediments in Crowleys Ridge, southeastern Missouri. *Bull. Am. Assoc. Petrol. Geol.* 17: 1003-1009. 1933; also Farrar, W. The geology and bleaching clays of southeast Missouri. Part I. The Cretaceous and Tertiary Geology. *Mo. Geol. Surv. Bien. Rept. Appendix I.* pp. 7-20. 1935.

<sup>3</sup> Marbut, C. F., Physical features of Missouri. *Mo. Geol. Surv.* 10: 76. 1896.

covered was left with these, as well as a deep mantle of soil and clay, the result of the grinding and pulverizing of the rocks over which it had passed. Later, much of this material was taken up and redistributed over wider areas by the waters of the flooded streams. The ice sheet may have come as far south at this time as Clinton, Carroll, and Randolph counties.<sup>4</sup> In the later Iowan epoch the ice seems to have again advanced to just within the northern borders of Missouri.

The thick deposits of loess, which are so conspicuous above the bluffs of the Missouri River from Atchison County to below Kansas City and which also occur along the Mississippi River on the eastern side, were probably deposited in shallow lakes or sluggish streams during this time of the retreating ice.

The most recent effects of geological forces in the state can be seen in the alluvial valleys of streams, in eroded surfaces and ravines that result from every flood, and in the cumulative effects of frost, wind, and rain, all of which go on every year, modifying the surface of the land and influencing the vegetation.

The present topography and surface geology of the state is the result of this long geologic history, every cycle and change of which has had its influence in determining the present character and distribution of the flora.

Some plants are restricted to special kinds of soil and others show a preference for certain ones. And since most of the soils in Missouri, except over the glaciated areas of the Prairie region and in the alluvial valleys of streams, are residual and have resulted from the breaking down of the local rocks, the relation between the underlying geological formation and the plants that grow above them is often very close.

Plants that grow on alkaline soils, or those containing a large percentage of lime, are called calciphiles. Soils and plants of this class are usually found in limestone areas. Acid or sub-acid soils, deficient in lime, are generally found in areas where

<sup>4</sup>Todd, J. E., Formation of the quaternary deposits of Missouri. Mo. Geol. Surv. 10: 213. 1896.

sandstones, cherts, and other siliceous or granitic rocks come to the surface. But acidity may result locally from other causes, and in the Ozark region this type of soil is often due to the leaching out of the lime and the accumulations of chert that was originally present as lenses or nodules in the limestone strata, or to the concentration of magnesium in dolomite areas. Plants that grow on acid soils are called oxylophiles, but most plants are not absolutely restricted to one type of soil, though showing a more or less decided preference for it. Another group of plants, including by far the greatest number, are found on soils of not too pronounced a character, but which may be either neutral, sub-acid, or sub-alkaline. Such plants are described as circumneutral. Others, such as many of the common weeds, grow on almost any sort of soil, where other conditions are not too unfavorable, and these are said to be indifferent.

#### THE FLORA

In its broadest sense the term flora embraces all forms of vegetation found within a region, including, besides the higher or flowering plants, mosses, lichens, fungi, algae, and other less conspicuous and microscopic groups. But it is generally used in a much more restricted way, and in speaking of the flora most writers and students have in mind only the more conspicuous groups of the phanerogams and vascular cryptogams, and it is in this sense that the term is used in this catalogue.

The character of the vegetation in any region is determined by the physical conditions, and the requirements of different sorts of plants vary widely. Some grow directly in water or require a constant and abundant water supply; others grow in drier situations or can live only in places that are usually very dry and well drained. Some require shade or the support or protection of other species; and some thrive only with abundant light and sunshine. Many forms of vegetation are very sensitive to frost and cold and are limited to tropical or subtropical regions; while others, through long periods of dormancy, have become inured to severe cold. Within every region

of any considerable extent a wide variation in many or all of these conditions is found, giving opportunity for plants of different requirements within certain limits to find a place in the flora. But the limits of a region and its flora are defined more or less sharply by physical barriers or by differences in ecologic conditions. Climatic zones of temperature or rainfall, geographic barriers, such as oceans, high mountain ranges, deserts, or wide river valleys, or sudden changes in the character of the soil or drainage, are amongst the things that often determine the boundaries of floras. Some of these barriers, however, are not absolute. The effect of climate asserts itself only gradually and in different degrees upon different sorts of plants, so that the boundaries between different floras or subdivisions of floras are generally not sharp and clear, but there is a border line along which one merges into another. This is particularly true when speaking of the flora of a limited area.

In considering the flora of Missouri, it should be remembered that it is only a part of the flora of eastern and middle North America, and that while several different plant regions can be recognized within the state, the boundaries between none of them are absolute, and that the range of many species extends from one region to adjoining ones and often throughout the entire state. But at the same time each of the principal plant regions, and to a less extent each subdivision of them, is distinguished by the presence of a number of species restricted to it, and by certain characteristics in the type and composition of the flora.

#### PLANT REGIONS

The principal plant regions of the state, corresponding in general to the physiographic regions previously described, are the Southeastern lowlands, the Ozark region, and the Prairie region, but the boundaries of the physiographic and phytogeographic regions are not quite identical. In places the flora of the lowlands pushes for short distances up the river valleys into the Ozark plateau, and the flora of the latter extends northward beyond the plateau and is the dominant element along the



bluffs north of the Missouri River and on the hills bordering that stream as far west as the mouth of the Chariton. On the western side it also occupies the river bluffs and rocky uplands in what is mainly the Prairie region, while, on the other hand, wedge-like extensions of the prairie flora penetrate the Ozark region, and colonies of prairie plants occupy glades and openings in the forest.

Lists of characteristic plants are given after the description of each of the plant regions. These are intended to include such species as are wholly or mainly confined to the region, and many of the most common and conspicuous plants may not be mentioned because of the fact that they are equally common in other regions.

#### SOUTHEASTERN LOWLANDS REGION

In the Southeastern lowlands there are no outcrops of solid rocks except a few outlying remnants along the border of the Ozarks. Much of the soil has been transported as alluvium by streams, and in places it has been enriched by humus from the decay of the forests. In other parts it has become acid through leaching, lack of drainage, or the influence of the decaying vegetation. On some of the slight elevations the soil is sandy, and this may have been washed down locally into depressions, forming sandy bogs or bayous, with an acid-loving type of vegetation. Most of the soils in this region are either sub-acid or neutral, with areas of a definitely acid type and others that are mildly alkaline. The drainage is generally poor, except on Crowleys Ridge, and although there are many plants here not found in other parts of the state, the flora is rather uniform over most of the region. The characteristic and dominant plants are those of the Gulf Coastal Plain, and the region as a whole is Lower Austral, and with the southern phase of the Carolinian flora.

Nearly all of the region was originally forested with a dense and luxuriant growth of deciduous trees. In the swampy or more frequently inundated areas, bald cypress, tupelo (*Nyssa aquatica*), pumpkin ash (*Fraxinus profunda*), red maple, swamp hickory, water locust, swamp cottonwood (*Populus*



*heterophylla*), water elm (*Planera aquatica*), overcup oak, itea, button-bush, and a few other trees and shrubs are dominant.

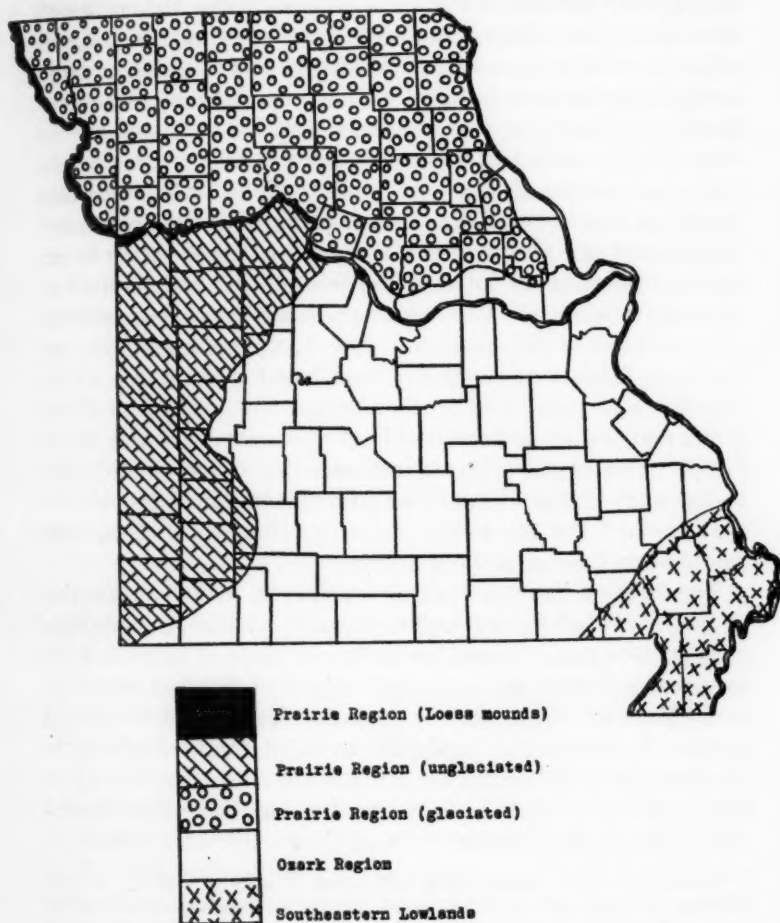


Fig. 2. Map of Missouri, showing the plant regions.

There are comparatively few herbaceous plants except aquatics, although coarse sedges and grasses and some others grow along the margins of the sloughs and swamps. On the

slightly higher ground above the flood stage, or where it is seldom inundated, the flora is much richer in species. The forest here contains many sorts of oaks, white hickory, sweet gum, black gum, winged elm, white ash, flowering dogwood, and other trees, besides a variety of shrubs and vines and a large array of herbaceous plants. Yellow pine (*Pinus echinata*) is found rarely on the higher sandy ground, but there are no other conifers and seldom any ericaceous plants. Most of the forest species found on the drier parts of the lowlands are also found on Crowleys Ridge, and growing with them are many others that are practically restricted to this elevation in the region. Some of the latter are species of distinctly eastern or northeastern distribution which are near their western limits here, at least in this latitude. Beech, Spanish oak (*Quercus falcata*), tulip-tree, cucumber-tree, sweet gum, linden (*Tilia glabra*), and sugar maple are amongst the commonest forest trees, and the scarlet oak and beaked hazelnut are also rarely found. Geological evidence indicates that Crowleys Ridge lay to the east of the Mississippi River until comparatively recently, when the channel of the river changed, and the flora would seem to lend support to this.

The flora of the Southeastern lowlands, with the exception of the eastern element found on Crowleys Ridge, is probably a very ancient one. Except for the loss of some of its more tropical species, it may have changed only slightly since middle or early Tertiary time, when it extended far beyond its present limits. In Missouri it probably occupied the lowlands to the north and west before the elevation of the Ozark plateau, where traces of it are still to be found, and it may have covered most of the state before the incursion of the northern ice sheet.<sup>5</sup>

<sup>5</sup> Evidence is rapidly accumulating that seems to make it necessary to revise the ideas previously held as to the intensity of the cold that accompanied the advance of the glaciers in the Quaternary era, and of its completely destructive effects upon the flora. It now seems more probable that fragments of the forest and associated herbaceous flora continued to flourish in parts of the generally glaciated regions, especially toward the southern limits of the ice, although doubtless losing many of the less hardy species. Similar conditions are found today in regions where glaciers are present and where a varied flora is sometimes found growing almost up to the edge of the ice.

Fossil remains of the bald cypress, which now reaches its northern limits here, have been found in Tertiary and Pleistocene deposits over a large part of North America, reaching as far north as the St. Lawrence valley. And other fossil as well as living plants prove the former wide extent of this southern flora. The physiography of the Ozark region and of regions surrounding it was at that time very different, and it has since also undergone great climatic changes in the course of which plants have invaded the region from different directions. But it is interesting to find that a number of species which are generally of coastal distribution and that are now mainly confined to the Southeastern lowlands in Missouri reappear in isolated stations far up the Mississippi River and sometimes in remote parts of the Ozark region. The most extensive colonies of such plants are along White River and its tributaries, and some species extend to the western boundaries of the state. As the White River country belongs to the Ozark region, of which it is a rather distinct subdivision, it will be described later, but a few examples of the extension of lowland species into other parts of the state may be mentioned here.

The green haw (*Crataegus viridis*) is a common species throughout the Coastal plain from Virginia and Florida to eastern Texas, and in Missouri it is abundant in wet woods in the Southeastern lowlands. But it also extends up the Mississippi and Missouri Rivers to Marion and Cole counties, and it is found in the valleys of some of the other larger streams across the southern part of the state, and northward again along the western side of the state to the Marais des Cygnes bottoms in Bates County. Although usually a species of low or swampy woods, it is found both in northeastern Missouri and in the southwestern part of the state, on high limestone hills where there is an abundant supply of seepage water along the ledges in rainy seasons. *Rhamnus caroliniana* and *Ilex decidua*, both of which have a general range similar to that of the green haw, also have much the same range as that species in Missouri, although the former does not extend quite so far north. And it is an interesting fact that all of them have

adapted themselves to the same unusual conditions in the limestone areas. *Forestiera acuminata* is another lowland species, although its general range is more southwestern, that in Missouri extends from the Southeastern lowlands up the Mississippi River to Pike County, and in isolated stations westward along White River and Spring River in Jasper County. *Quercus lyrata* and *Trachelospermum difforme*, typical Coastal Plain species, besides being common in the Southeastern lowlands, are found locally in St. Louis County. *Ampelopsis arborea* extends north to Jefferson and St. Louis counties, and *Gleditsia aquatica* is also found in the former county. *Hottonia inflata* has been collected in St. Louis County, and *Mitchella repens* as far north as Lincoln County. The pubescent form of the sugar maple, *Acer saccharum* var. *Schneckii*, which has a well-defined range in the lowlands of the central Mississippi Valley, including southeastern Missouri, has been found in an isolated locality in Benton County. Other southern plants that apparently skip across the state from the Southeastern lowlands to the drainage basin of Spring River in southwestern Missouri are *Paspalum floridanum*, *Scirpus carinatus*, *Agalinis viridis*, *Mecardonia acuminata*, and *Pluchea petiolata*.

The unusual distribution of some of these plants may possibly be accounted for on the theory of recent extensions of range, but in the case of some of those which are found over such wide areas, as well as of others found in the White River sub-region, it seems more reasonable to believe that they are survivals from a former more general distribution in the region and examples of successful adaptation to changing conditions.

The Southeastern lowlands is the most distinct plant region in the state and its flora is the most uniform. But in recent years lumbering, drainage, and cultivation have worked widespread destruction upon the native flora, and it is rapidly losing its distinctive character, while many of the plant species seem doomed to early destruction here.

CHARACTERISTIC PLANTS OF THE SOUTHEASTERN LOWLANDS  
REGION

<i>Woodwardia areolata</i>	<i>Wisteria macrostachya</i>
<i>Botrychium dissectum</i> var. <i>tenuifolium</i>	<i>Sesbania macrocarpa</i>
<i>Taxodium distichum</i>	<i>Amorpha croceolana</i>
<i>Sagittaria platyphylla</i>	<i>Croton Engelmanni</i>
<i>Echinodorus radicans</i>	<i>Crotonopsis linearis</i>
<i>Panicum hians</i>	<i>Ilex opaca</i>
<i>Arundinaria gigantea</i>	<i>Evonymus americana</i>
<i>Cyperus Gatesii</i>	<i>Acer floridanum</i>
<i>Cyperus compressus</i>	<i>Acer rubrum</i> var. <i>Drummondii</i>
<i>Cyperus dipaciformis</i>	<i>Aesculus discolor</i> var. <i>mollis</i>
<i>Erythronium macrostachya</i>	<i>Sida Elliottii</i>
<i>Carex cherokeensis</i>	<i>Vitis rotundifolia</i>
<i>Carex Joorii</i>	<i>Vitis palmata</i>
<i>Carex oxylepis</i>	<i>Hypericum petiolatum</i>
<i>Carex louisianica</i>	<i>Hypericum virginianum</i>
<i>Wolffia papulifera</i>	<i>Viola lanceolata</i>
<i>Wolffella floridana</i>	<i>Rhexia mariana</i>
<i>Smilax glauca</i> var. <i>leuophylla</i>	<i>Jussiaea decurrens</i>
<i>Smilax rotundifolia</i> var. <i>quadrangularis</i>	<i>Ludwigia glandulosa</i>
<i>Hymenocallis occidentalis</i>	<i>Aralia spinosa</i>
<i>Iris fulva</i>	<i>Eryngium prostratum</i>
<i>Thalia dealbata</i>	<i>Cynoscium digitatum</i>
<i>Populus heterophylla</i>	<i>Steironema radicans</i>
<i>Leitneria floridana</i>	<i>Cornus femina</i>
<i>Carya aquatica</i>	<i>Nyssa aquatica</i>
<i>Quercus Prinus</i>	<i>Bumelia lycioides</i>
<i>Quercus lyrata</i>	<i>Styrax americana</i>
<i>Quercus nigra</i>	<i>Frazinus profunda</i>
<i>Quercus Phellos</i>	<i>Frazinus profunda</i> var. <i>Ashei</i>
<i>Quercus Nuttallii</i>	<i>Polypremum procumbens</i>
<i>Quercus falcata</i>	<i>Trachelospermum difforme</i>
<i>Quercus falcata</i> var. <i>pagodaefolia</i>	<i>Asclepias perennis</i>
<i>Planera aquatica</i>	<i>Asclepias variegata</i>
<i>Phoradendron flavescens</i>	<i>Hydrolea ovata</i>
<i>Polygonum densiflorum</i>	<i>Hydrolea affinis</i>
<i>Brunnichia cirrhosa</i>	<i>Lippia nodiflora</i>
<i>Cabomba caroliniana</i>	<i>Agallinis heterophylla</i>
<i>Ranunculus pusillus</i>	<i>Veronica serpyllifolia</i>
<i>Itea virginica</i>	<i>Bignonia capreolata</i>
<i>Liquidambar styraciflua</i>	<i>Dianthera ovata</i>
<i>Crataegus Marshallii</i>	<i>Diodia virginiana</i>
<i>Rosa palustris</i>	<i>Cephalanthus occidentalis</i> var. <i>pudescens</i>
<i>Gleditsia aquatica</i>	<i>Oldenlandia uniflora</i>
<i>Cassia Tora</i>	<i>Cayaponia grandifolia</i>
<i>Cassia occidentalis</i>	<i>Lobelia puberula</i>



<i>Mikania scandens</i>	<i>Spilanthes americana</i> var. <i>repens</i>
<i>Eupatorium incarnatum</i>	<i>Gaillardia lutea</i>
<i>Eupatorium cuneifolium</i> var. <i>serratum</i>	<i>Helianthus angustifolius</i>
<i>Solidago suaveolens</i>	<i>Pluchea foetida</i>
<i>Solidago leptocepala</i>	

CHARACTERISTIC PLANTS OF CROWLEYS RIDGE IN  
SOUTHEASTERN LOWLANDS\*

<i>Erianthus strictus</i>	<i>Malus ioensis</i> var. <i>spinosa</i>
<i>Carex nigro-marginata</i>	<i>Nemophila microcalyx</i>
<i>Corylus cornuta</i>	<i>Hydrophyllum canadense</i>
<i>Fagus grandifolia</i>	<i>Blephilia ciliata</i>
<i>Fagus grandifolia</i> var. <i>caroliniana</i>	<i>Pycnanthemum incanum</i>
<i>Liriodendron tulipifera</i>	<i>Frazinus biltmoreana</i>
<i>Magnolia acuminata</i>	<i>Catalpa speciosa</i>
<i>Stylophorum diphyllum</i>	<i>Epifagus virginiana</i>
<i>Hydrastis canadensis</i>	<i>Mitchella repens</i>
<i>Actaea brachypoda</i>	<i>Helianthus microcephalus</i>
<i>Ribes cynosbati</i>	

\* It will be noted that several species of this list are of wider range in other regions of the state, but they are practically restricted to this part of the lowlands.

THE OZARK REGION

Magnesian limestones and sandstones are the surface rocks over a large part of the Ozark region. The strata are usually horizontal or only slightly tilted, although in places there are local faults and disturbances. Chert, which is associated with the magnesian limestone in many places, often covers the uplands as a residual deposit after the less resistant limestone has been removed by erosion or solution. The magnesian limestone or dolomite produces an alkaline soil except where an unusual amount of magnesium is present or where the lime has been leached out on exposed slopes. In such places, as well as on the cherty uplands, the soil may be more or less acid.

The sandstones, of which the Roubidoux and St. Peter are the most important, outcrop along bluffs and ledges and locally over more level areas. They are composed of rather pure quartz and weather into distinctly acid soils, on which a number of characteristic oxylophytes are found.

The granites, syenites, and other igneous rocks of the Iron

Mountain sub-region also produce acid soils, but on account of the hardness of the rocks they are usually not so pronouncedly acid as are those of the sandstone areas. Other local areas of sandstone, with resulting acid soils, are found on the eastern side of the region, where the La Motte sandstone outcrops along the east side of the Iron Mountains and the Ste. Genevieve sandstone near the Mississippi River, and also towards the western side where there are numerous small areas of Pennsylvanian sandstone.

East of the Iron Mountains and along the Mississippi River local outcrops of Silurian, Devonian, and Lower Carboniferous age occur; and limestones of the Mississippian series also underlie considerable areas along the west side of the Ozark dome and extend beyond into the Prairie region. The limestones of this series are nearly pure calcium carbonate, and they usually produce fertile alkaline soils. But chert is also present in these beds, sometimes in large quantities, and acid or sub-acid soils are found locally on eroded ridges or slopes.

Shales are not abundant in most parts of the Ozark region, but they sometimes occur as separating layers between the strata of dolomite or limestone, and some thicker beds of Devonian or earliest Mississippian age outcrop locally on both sides of the plateau. The shales disintegrate into stiff soils or clays, which are generally acid, and on account of poor drainage, dripping banks or barrens, according to the location and slope, may be found in such places.

The flora of the Ozark region is more complex and varied than that of either of the other plant regions of the state, and several rather distinct sub-regions and plant colonies can be recognized in it. Considered as a botanical region, the boundaries both on the north and the west side extend somewhat beyond the Ozark plateau. The richness and diversity of the flora can be attributed to the present topography, drainage, and surface geology, and to the geologic history of the region.

The geographical position of the Ozark region on the American continent and its long geologic history both point to the probability of its having been a center of plant development

and distribution from early times, and it is extremely likely that some of the Ozarkian-Alleghenian species originated here and were dispersed from this center instead of the migration having been in the opposite direction, and the same may be true of some of the plants that now range widely to the southwest. Most of the trees that now form the Ozark forests seem to have invaded the region from the south in comparatively recent times, although their ancestors may have occupied it before they were driven out by the cold climate of the Pleistocene. A few woody species and many herbaceous ones now confined to the Ozark region or found also throughout a wider range only in special habitats often far apart may have first appeared here. As examples of such woody plants may be mentioned *Castanea ozarkensis*, *Hamamelis vernalis*, *Cladrastis lutea*, *Andrachne phyllanthoides*, and *Cotinus americanus*. It is interesting to note that nearly all of these belong to ancient genera common to both eastern Asia and North America.

The scattered distribution of many Ozark plants and the presence in the region of numerous relic species and colonies of plants, some of which are described later, can readily be understood when it is remembered that it has been a continuous land surface but with changing boundaries, elevations, climate, and other ecological conditions since late Paleozoic time, and it is not surprising that of the numerous waves of plant life that have passed over it during this time, some of the later ones at least should have left recognizable traces in the present flora.

Viewed broadly, the flora of the Ozark region is a forest flora, with the oak-hickory type of woods prevailing on the uplands, and with mixed or pure stands of yellow pine on some of the higher ridges. The hard-wood trees are usually of small or medium size and in places they are distinctly stunted. The forest in the alluvial valleys is much richer in species and the trees attain a considerably larger size. Only traces of the forest now remain in the valleys, as most of the land has been cleared for agricultural use. The forest, with its associated herbaceous plants, belongs to the great Carolinian flora, and

floristically it is intermediate between the austral and boreal phases, with a slight preponderance of southern species. The herbaceous plants of general distribution on the uplands are usually species that range from the Appalachian plateau to the grassy plains.

In the protection of bluffs along the larger streams and in the deep V-shaped valleys of the more rugged parts of the region, many plants of more northern range are found, and in various places, especially towards the western side of the plateau, there are numerous prairie openings and rocky glades and barrens in which plants of western or southwestern distribution are an important or dominant element. In a number of other local areas scattered throughout the region, generally where some unusual ecological condition prevails, small colonies or single species of plants are found that do not seem to belong to the general flora. The presence of some of these relic species is interesting and significant and may help to throw light on the geological and botanical history of the region.

*Sink-hole ponds.*—In portions of the Ozark region occur what are locally known as "sink-hole ponds." These are small, shallow, usually circular bodies of water which occupy natural depressions in the level upland plateau, and are best developed in certain of the flatter portions of the Ozark Plateau, particularly in Dent, Shannon, Texas, and Howell counties. The sink-holes become gradually built up with soil and humus until only a shallow depression remains which fills up with water that usually stands throughout the year. Floristically, these natural ponds are extremely interesting. They are generally surrounded by an upland oak-hickory forest of *Quercus palustris*, *Q. coccinea*, *Q. marilandica*, *Q. stellata* associated with *Carya cordiformis*, *C. alba*, *C. Buckleyi* var. *arkansana*, *C. ovalis* var. *obcordata*, and sometimes other trees. Bushes of *Cephalanthus occidentalis*, and *Hibiscus lasiocarpus* often occur, standing in one to three feet of water. The lower crotches of these shrubs may support large tussocks of *Carex decomposita*, among which or separately may be growing plants of *Viola lanceolata*, *Lycopus rubellus*, *Steironema lanceolatum*,

and *Galium Claytoni*. Aquatic species in great variety attain a luxuriant development in these ponds, among which are *Potamogeton pulcher* and *P. diversifolius*, *Glyceria acutiflora*, *Eleocharis acicularis*, *Spirodela polyrrhiza*, *Heteranthera reniformis* and *H. limosa*, *Brasenia Schreberi*, *Ranunculus aquatilis* var. *capillaceus*, *R. pusillus*, *R. oblongifolius*, *Callitriche heterophylla*, *Scirpus americanus*, *Polygonum hydropiperoides*, *Myriophyllum heterophyllum*, *Sagittaria heterophylla* and *S. graminea*, and *Utricularia gibba*. Along the pond margins may occur *Gratiola lutea* and *G. virginiana*, *Acorus Calamus*, and other species. Certain ponds support distinct species. *Glyceria acutiflora* and *Carex decomposita* have been found only in such ponds, while *Viola lanceolata* is known from only two isolated stations in southeastern Missouri, one of which is in a sink-hole pond.

#### CHARACTERISTIC PLANTS OF GENERAL DISTRIBUTION IN THE OZARK REGION

<i>Adiantum Capillus-Veneris</i>	<i>Crataegus collina</i>
<i>Polypodium polypodioides</i>	<i>Rosa subserrulata</i>
<i>Pteridium latiusculum</i>	<i>Lespedeza Stuevei</i>
<i>Asplenium Trichomanes</i>	<i>Lespedeza intermedia</i>
<i>Camptosorus rhizophyllus</i>	<i>Lespedeza hirta</i>
<i>Pinus echinata</i>	<i>Cassia nititans</i>
<i>Aristida purpurascens</i>	<i>Baptisia vespertina</i>
<i>Panicum sphaerocarpon</i>	<i>Vicia caroliniana</i>
<i>Paspalum circulare</i>	<i>Clitoria mariana</i>
<i>Commelina virginica</i>	<i>Polygala verticillata</i> var. <i>ambigua</i>
<i>Quercus Shumardii</i> var. <i>Schneckii</i>	<i>Crotonopsis elliptica</i>
<i>Quercus velutina</i> var. <i>missouriensis</i>	<i>Euphorbia commutata</i>
<i>Celtis laevigata</i> var. <i>texana</i>	<i>Vaccinium arboreum</i> var. <i>glaucescens</i>
<i>Celtis pumila</i> var. <i>georgiana</i>	<i>Vaccinium stamineum</i>
<i>Silene virginica</i>	<i>Vaccinium stamineum</i> var. <i>neglectum</i>
<i>Arenaria patula</i>	<i>Vaccinium vacillans</i> var. <i>crinitum</i>
<i>Ranunculus Harveyi</i>	<i>Ilex decidua</i>
<i>Aristolochia tomentosa</i>	<i>Rhamnus caroliniana</i>
<i>Hepatica americana</i>	<i>Vitis rupestris</i>
<i>Hamamelis vernalis</i>	<i>Ascyrum hypericoides</i>
<i>Cocculus carolinus</i>	<i>Passiflora lutea</i>
<i>Calyocarpum Lyoni</i>	<i>Angelica villosa</i>
<i>Hydrangea arborescens</i>	<i>Eulophus americanus</i>
<i>Aruncus sylvestris</i>	<i>Ligusticum canadense</i>
<i>Gillenia stipulata</i>	<i>Nyssa sylvatica</i>



<i>Bumelia lanuginosa</i>	<i>Triosteum angustifolium</i>
<i>Stolonema quadriflorum</i>	<i>Silphium Asteriscus</i>
<i>Amaoria illustris</i>	<i>Parthenium hispidum</i>
<i>Vincetoxicum carolinense</i>	<i>Eupatorium coelestinum</i>
<i>Heliotropium tenellum</i>	<i>Brickellia grandiflora</i>
<i>Onosmodium subsetosum</i>	<i>Solidago Gattingeri</i>
<i>Scutellaria incana</i>	<i>Solidago hispida</i>
<i>Cunila origanoides</i>	<i>Solidago petiolaris</i> var. <i>Wardii</i>
<i>Monarda Bradburiana</i>	<i>Solidago arguta</i> var. <i>Boottii</i>
<i>Aureolaria pectinata</i>	<i>Aster patens</i>
<i>Aureolaria grandiflora</i> var. <i>cinerea</i>	<i>Aster linariifolius</i>
<i>Agalinis Skinneriana</i>	<i>Aster ptarmicoides</i>
<i>Buchnera americana</i>	<i>Grindelia lanceolata</i>
<i>Euellia pedunculata</i>	<i>Rudbeckia speciosa</i>
<i>Galium virgatum</i>	<i>Rudbeckia missouriensis</i>
<i>Galium arkansanum</i>	<i>Helianthus occidentalis</i>
<i>Spermacoce glabra</i>	<i>Coreopsis lanceolata</i>
<i>Houstonia longifolia</i>	<i>Coreopsis pubescens</i>
<i>Lonicera flava</i>	<i>Hieracium longipilum</i>
<i>Viburnum rufidulum</i>	

Most of the plants on the above list are well distributed throughout the region and a few of them are found occasionally beyond the limits of the Ozarks either in the Southeastern lowlands or in the Prairie region; others are comparatively rare and local but are not confined to any one of the well-defined subdivisions. Many of the commonest trees, shrubs, and herbaceous plants of the Ozark region are found throughout the state and for that reason are not on this list. These include amongst woody plants the red cedar, several species of willows, cottonwood, ironwood, hop hornbeam, most of the oaks and hickories, red and American elm, hackberry, wild cherry, plums, red haws, roses, sassafras, sumachs, maples, lindens, mulberry, persimmon, ash, and many others.

*The Granitic-siliceous sub-region.*—Although the Iron and St. Francois Mountains, with smaller outlying areas of igneous rocks, constitute one of the most distinct sub-divisions of the Ozark region, the boundaries of this floral sub-region must be drawn more widely to include the surrounding sandstone areas, with a belt extending northward to beyond the Missouri River. This may be called the Granitic-siliceous sub-region. While there are many other places in the Ozark region where chert or

sandstone on the surface has given an acid character to the soil, this is by far the largest area and the one in which the influence on the flora of this type of soil can best be seen. The sandstones, being more friable and therefore disintegrating more rapidly, as well as being more permeable to water, furnish more favorable habitats for many oxylophytes than the granitic or porphyritic areas, and most of the local and characteristic species are found on or near sandstone outcrops. A rather stunted forest growth covers most of the region, but there are numerous open places in glades or where the bare rock comes to the surface on slopes or where it stands out as domes and peaks in the igneous areas or as bluffs and ledges of sandstone. Pine is found on some of the granite or trachyte hills and on the outcrops of sandstone as far north as Franklin County. The red cedar (*Juniperus virginiana*) is sometimes found growing on igneous or siliceous rocks, but it is much more frequent in limestone areas. Some of the trees of the Southeastern lowlands, such as Spanish oak, willow oak, black gum, and sweet gum, as well as a few herbaceous species, are found in the extreme southern part, but the dominant and characteristic element over the whole area is Alleghenian-Ozarkian, and a number of eastern plants reach their western limit of distribution here. Ericaceous plants are more abundant than in any part of the state, and the rosy azalea (*Rhododendron nudiflorum* var. *roseum*) is a characteristic species in this sub-region.

PLANTS CHARACTERISTIC OF THE GRANITIC-SILICEOUS  
SUB-DIVISION OF THE OZARK REGION

<i>Polypodium virginianum</i>	<i>Cyperus refractus</i>
<i>Asplenium pinnatifidum</i>	<i>Carex glaucoidea</i>
<i>Athyrium acrostichoides</i>	<i>Carex hystrixina</i>
<i>Thelypteris palustris</i> var. <i>pubescens</i>	<i>Allium cernuum</i>
<i>Thelypteris spinulosa</i>	<i>Malaxis unifolia</i>
<i>Thelypteris spinulosa</i> var. <i>intermedia</i>	<i>Habenaria peramoena</i>
<i>Dennstaedtia punctilobula</i>	<i>Salix sericea</i>
<i>Lycopodium lucidulum</i>	<i>Stellaria longifolia</i>
<i>Lycopodium lucidulum</i> var. <i>porophilum</i>	<i>Cerastium arvense</i> var. <i>oblongifolium</i>
<i>Lycopodium complanatum</i> var. <i>strobiliforme</i>	<i>Mitella diphylla</i>
	<i>Saxifraga virginicensis</i>

<i>Saxifraga pensylvanica</i> var. <i>Forbesii</i>	<i>Phlox maculata</i>
<i>Hamamelis virginiana</i>	<i>Trichostema dichotomum</i>
<i>Crataegus uniflora</i>	<i>Salvia lyrata</i>
<i>Euphorbia obtusata</i>	<i>Collinsonia canadensis</i>
<i>Linum striatum</i>	<i>Pedicularis lanceolata</i>
<i>Ilex verticillata</i> var. <i>padifolia</i>	<i>Aureolaria calycosa</i>
<i>Frasera carolinensis</i>	<i>Houstonia patens</i>
<i>Rhododendron nudiflorum</i> var. <i>roseum</i>	<i>Houstonia coerulea</i>
<i>Rhexia virginica</i>	<i>Solidago suaveolens</i>
<i>Vincetoxicum obliquum</i>	<i>Cirsium virginianum</i>
<i>Phlox glaberrima</i>	

*The White River sub-region and the bald knobs.*—In describing the drainage and the geology of the state mention has already been made of White River, which makes an incursion into the counties of Barry, Stone, and Taney, along the southern border. Another loop of this river also nearly touches the state boundary a little farther east, near the southwest corner of Ozark County, and all of the south-flowing streams as far east as Howell County are tributary to it.

The extremely rugged country bordering this river and the lower courses of some of its tributaries comprises one of the most interesting and distinct subdivisions of the Ozark region. The river in its circuitous course has cut a deep narrow valley through the nearly horizontal strata of the Ordovician rocks. Thick solid beds of dolomite, separated by softer layers of shale, underlie most of the area. Hard nodules or masses of chert are sometimes present in the dolomite or are strewn in broken fragments over the surface of the hills, and ledges or local outcrops of quartzite and sandstone appear in some of the bluffs and hills. The river bluffs sometimes have a height of 200 or 300 feet, and the stream in places impinges against them or is separated only by a steep rocky talus. On the opposite side there may be a narrow alluvial or gravelly valley, usually subject to occasional overflows. The uplands a little back from the river are covered with the typical oak-hickory forest of the Ozarks, but along the river bluffs and in the deep cañons of the tributary streams, as well as on the bald knobs, many rare and characteristic plants are found. Along the talus or alluvial strip at the base of the bluff there is usually a dense

growth of trees. The wider parts of the valley that were originally wooded with large trees have nearly all been cleared for cultivation, but floods often work destruction on crops and strip off the surface soil. Where there are irregular ledges or clefts along the face of the cliffs many small trees and shrubs as well as herbaceous plants have found lodgment. The character of the vegetation depends upon the exposure. Where this is to the north or northeast a number of eastern Appalachian species are present. Amongst these are the butternut, northern red oak, cucumber-tree (*Magnolia acuminata*), yellow-wood (*Cladrastis lutea*), sugar maple, nettle-tree (*Celtis occidentalis* var. *canina*), linden, staff-tree, and hydrangea, besides a luxuriant growth of ferns and other herbaceous plants. This association of plants is not, however, confined to this sub-region, but most of the species are also found in similar situations throughout the Ozarks, as will be shown later.

On south and west exposures the assemblage of plants is quite different, especially on the higher levels of the bluff. Fantastically twisted and gnarled junipers often crown the crest of the cliffs or cling precariously to crevices and ledges along its face. The red cedar (*Juniperus virginiana*) is the common species, but in Barry County as well as farther south in Arkansas, another species, called the white cedar by the local inhabitants on account of its thick white sap-wood, has been found. In open situations this tree has a different habit from that of the red cedar, with usually several boles or branches arising from the base instead of a single trunk. It is also distinguished by the usually single seed of the fruit and by the minutely serrulate margins of the leaves. This was named *Juniperus Ashei* Buchholz<sup>a</sup> for the late Mr. W. W. Ashe of the U. S. Forest service, who first called attention to it, but a careful study of this species and a comparison with *Juniperus mexicana* Sprengel seem to indicate clearly that the two are identical and that the latter and older name should be applied to the white cedar of the Ozarks. The range of *Juniperus mexicana*, as given in the second edition of Sargent's 'Manual,'

<sup>a</sup> Bot. Gaz. 90: 329. 1930.

is from Brazos County over the low limestone hills of western and southern Texas and southward into Mexico. It is very abundant on the limestone hills of the Edwards Plateau of central Texas and has recently been collected in the Arbuckle Mountains of Oklahoma, and as a number of other southwestern plants of similar range are associated with it in the White River sub-region there seems to be conclusive evidence that this flora at one time extended eastward to the Ozarks. In similar situations is also found the smoke-tree (*Cotinus americanus*), one of the rarest of American trees, and known only from a few other isolated localities in Alabama, Kentucky, Arkansas, Oklahoma, and Texas. It is most abundant and attains its largest size here along the White River bluffs, where it sometimes reaches a height of 35 or 40 feet and a trunk diameter of over a foot. The soap-berry (*Sapindus Drummondii*) and *Acacia angustissima* var. *hirta*, both species of the Southwest, are sometimes found in protected situations along the talus at the base of the bluff, and a succulent vine, *Cissus incisa*, has been found in Taney and McDonald counties, where it grows in hot dry exposures on the face of the bluff. The Missouri currant (*Ribes odoratum*) grows on ledges or in clefts along the bluffs, usually in partial shade. Characteristic also of such places, although of wider distribution in the state, are *Celtis pumila* var. *georgiana*, *Celtis laevigata* var. *texana*, *Bumelia lanuginosa*, *Fraxinus quadrangulata*, *Rhus canadensis* var. *serotina*, and *Parthenocissus quinquefolia*; and amongst herbaceous plants, selecting situations with various degrees of exposure, are *Woodsia obtusa*, *Pellaea glabella*, *Asplenium resiliens*, *Notholaena dealbata*, *Cheilanthes Feei*, and rarely *C. alabamensis*, *Elymus virginicus* var. *glabriflorus*, *Uniola latifolia*, *Commelina erecta* var. *crispa*, *Mentzelia oligosperma*, *Scutellaria ovata*, *Aster oblongifolius*, and *Solidago radula*. It is evident that this is mainly a southwestern flora, and it contrasts strikingly with that of the north exposures in which Alleghenian species predominate.

But even more interesting and distinct than the flora of the river bluffs is that of the bald knobs, as the eroded hills oc-



cupping the divides between the valleys are locally known. The peculiar topography found here is due to the long-continued action of erosional forces upon the alternating harder and softer horizontal strata, consisting of compact layers of fine, porous dolomite sometimes two or three feet in thickness, separated by bands of shale or clay. The thicker ledges stand out as low bluffs encircling the terraced hills, separated by wide slopes of rather sterile soil which becomes thoroughly saturated with seepage water during rainy times and extremely dry later in the season. As a result of this unequal distribution of available moisture and other factors only a few small trees and shrubs have, at least until recently, been able to establish themselves on the hills, which stand out in striking contrast to the heavily wooded valleys. In parts of the region some of the higher hills are capped with remnants of the purer Mississippian limestone, and in such places there is usually a much more abundant woody growth as well as many herbaceous species not found on the dolomite.

A few small trees and a variety of shrubs are usually found along the outstanding ledges. Amongst the commonest species are *Quercus Shumardii* var. *Schneckii*, *Q. Muhlenbergii*, *Ulmus alata*, *Celtis laevigata* var. *texana*, *Cercis canadensis*, *Rhamnus caroliniana*, *Ilex decidua*, *Diospyros virginiana*, *Bumelia lanuginosa*, *Fraxinus americana*, and the woody twiner *Berchemia scandens*. On some of the steeper slopes *Cotinus americanus* is also found, as well as various other trees and shrubs from the surrounding forests. A number of herbaceous plants are also confined to the narrow protected strip at the foot of the ledges, but most of these are not restricted to the bald knobs but belong to the flora of the surrounding woods. The flora on the open slopes is not rich in the number of species, as most of the plants of the region cannot endure the conditions, and as a result those that are able to do so have a practical monopoly of the area. Some of these are so abundant locally and are so conspicuous when in flower that at such times the hillsides present a most brilliant and striking spectacle. Almost the only trees which flourish on these open slopes are the junipers

(*Juniperus virginiana* and more locally *J. mexicana*, and sometimes the former is abundant). Such low shrubs as *Rosa carolina*, *Ceanothus ovatus* var. *pubescens*, *Acacia angustissima* var. *hirta*, *Andrachne phyllanthoides*, and a few others may be found here. The *Andrachne*, locally called buck-brush, is the most abundant and characteristic, and it is interesting both because of its range, which extends through northern and central Arkansas and eastern Oklahoma to central Texas, and because it is the only woody member of the large and generally southern family of the Euphorbiaceae to extend so far north.

The herbaceous plants of these slopes are mostly either short-lived annuals or deep-rooted perennials. Amongst the most abundant and conspicuous are the tall larkspur (*Delphinium Treleasei*), an endemic species, the large-flowered evening primrose (*Oenothera missouriensis*, locally known as glade lily), the pink- and the yellow-rayed cone-flowers (*Echinacea pallida* and *E. paradoxa*), blue wild indigo (*Baptisia vespertina*), black-eyed-Susan (*Rudbeckia missouriensis*), and *Hymenopappus scabiosaeus*. In certain places the purple-bracted horse-mint (*Monarda citriodora*) and the large-flowered purple beard-tongue (*Pentstemon Cobaea* var. *purpureus*) are abundant, and both are very showy when in bloom. A number of other less conspicuous plants are also characteristic of the bald knobs, and many of them are found nowhere else in the state while others occur elsewhere locally in glades. These are included in the fuller list given in a later paragraph. An examination of this list will show that here also, as on the bluffs with south and west exposures, the predominant element in the flora is of southwestern range, but that mingled with such plants are also a number of species that have come from the eastern Appalachian region. In both cases they seem to be relic colonies isolated on these bald knobs and to include many species that have survived through adaptation to the peculiar conditions found here, while they are unable to compete with the more widespread and aggressive plants making up the present flora of the general region. The significance of such colonies in indicating the climatic changes that have occurred

in the region and in contributing evidence on its geologic history is very great, and it is interesting to see whether we can determine through their aid something of the sequence of events that brought these successive invasions of plants from different directions into the region.

In describing the Southeastern lowlands it was stated that the flora now confined to that section in Missouri probably occupied much of the area of the Ozark region before its last elevation, and it was suggested that the distribution of several species now scattered throughout parts of the state beyond this region may be accounted for in this way. Some of the plants found in the White River country and on the bald knobs seem to furnish even more conclusive evidence of this.

The small form of the cane (*Arundinaria gigantea*), a typical species of the Coastal Plain from Maryland and Florida to eastern Texas and extending with other southern plants into the Mississippi Embayment area of southeastern Missouri, where it grows in low wet woods and alluvial banks of streams and bayous, is also found along White River and its tributaries in southwestern Missouri. In this part of its range it usually grows at the foot of rocky bluffs, often in widely separated stations and under very different conditions from those found in the lowlands. The southern red oak (*Quercus falcata*) is a tree of wide distribution in the Coastal Plain, and it is a characteristic species of the Southeastern lowlands, growing on the low elevations or in the better-drained bottom lands. It is also found along White River as far west as Barry County, Missouri, and Carroll County, Arkansas, where it has taken to the dry rocky hills. The fringe-tree (*Chionanthus virginica*) has a similar range, although more restricted in Missouri, where it is known locally in the lowlands of Mississippi County and in dry rocky uplands along the North Fork of White River, in Ozark County. Similarly, the herbaceous *Hymenopappus scabiosaeus*, a common plant of sandy areas in the Coastal Plain and found in the lowlands in Scott and Mississippi counties, reappears as a characteristic species of the glades and bald knobs along White River. Other southern plants with

a somewhat similar distribution in Missouri are the cucumber tree (*Magnolia acuminata*) and the leguminous *Rhynchosia latifolia*. The widely scattered distribution of *Forestiera acuminata*, *Rhamnus caroliniana*, and *Ilex decidua* has already been mentioned. All of them are found along White River, the first growing along the river margins or along sloughs and old channels, and the others along rocky ledges of the bald knobs.

Most remarkable of all, however, is the supple-jack or rattan vine (*Berchemia scandens*), both for its abundance and the way in which it has adapted itself to conditions entirely different from those of its usual habitats. In the Coastal Plain, where it is found from Virginia and Florida to eastern Texas and in the Southeastern lowlands of Missouri, it usually grows in swamps or low wet woods, and there it is a slender twiner, winding its tough stems about the trunks of shrubs and trees, which it sometimes ultimately strangles in its strong embrace. On the bald knobs, to which it is confined in the White River sub-region, it generally has a somewhat shrubby habit in the absence of any support, although the slender branches find support on the rocky ledges or on shrubs or small trees where they are at hand. It has also adapted itself to the irregular water supply afforded by the run-off from the hills after rains and the seepage from the rocky ledges that continues for some time afterwards. After this is exhausted the ground often becomes very dry and sterile for a considerable period. In this case, since the plant is not found at all in the alluvial valley or along the bluffs, it is scarcely reasonable to believe that it could have surmounted the present wide barrier of the rocky uplands between the old Mississippi Embayment area and the bald knobs or that it may have been introduced on these hills by some unaccountable circumstance, have survived in so unusual an environment, and have spread from one isolated glade to another. The only reasonable explanation of its presence here seems to be that it is a relic of former general distribution through the region prior to its last elevation, and that it is one of the species that, finding itself stranded in the grad-

nally rising Ozark region, succeeded in accommodating itself to the conditions that have slowly developed in the glades of the bald knobs, where competition with other species has not been too keen.

But before considering further the significance of these remarkable relic colonies it may be well to mention others of a somewhat similar character found in other parts of the Ozark region.

CHARACTERISTIC PLANTS OF THE BALD KNOBS, SOME OF WHICH  
ARE ALSO FOUND IN ROCKY LIMESTONE OR DOLOMITE  
GLADES IN OTHER PARTS OF THE REGION

<i>Ophioglossum Engelmanni</i>	<i>Evolvulus argenteus</i>
<i>Isoetes Butleri</i>	<i>Scutellaria Bushii</i>
<i>Juniperus virginiana</i>	<i>Satureja glabra</i>
<i>Juniperus mexicana</i>	<i>Monarda citriodora</i>
<i>Sporobolus neglectus</i>	<i>Amazonia ciliata</i> var. <i>tenuifolia</i>
<i>Carex Crawei</i>	<i>Pentstemon Cobaea</i> var. <i>purpureus</i>
<i>Carex Meadii</i>	<i>Heliotropium tenellum</i>
<i>Allium stellatum</i>	<i>Centaureum tezensae</i>
<i>Nemastylis acuta</i>	<i>Hymenopappus scabiosaeus</i>
<i>Agave virginica</i>	<i>Echinacea paradoxa</i>
<i>Arenaria patula</i>	<i>Solidago Gattingeri</i>
<i>Talinum calycinum</i>	<i>Aster sericeus</i>
<i>Leavenworthia uniflora</i>	<i>Aster oblongifolius</i>
<i>Delphinium Treleasei</i>	<i>Aster oblongifolius</i> var. <i>rigidulus</i>
<i>Acacia angustissima</i> var. <i>hirta</i>	<i>Liatris cylindracea</i>
<i>Andrachne phyllanthoides</i>	<i>Marshallia obovata</i> var. <i>platyphylla</i>
<i>Berchemia scandens</i>	<i>Palafoxia callosum</i>
<i>Hypericum pseudomaculatum</i>	<i>Eudbeckia missouriensis</i>
<i>Oenothera missouriensis</i>	<i>Coreopsis lanceolata</i> var. <i>villosa</i>
<i>Stenosiphon linifolius</i>	

*Glades and barrens of the Ozark region.*—Rocky glades and open hillsides upon which ledges of rock come to the surface are found scattered throughout the Ozark region, and many characteristic plants, some of which are remote from the main area of their range, are found in such places. A considerable number of the species found on the bald knobs also grow in some of the rocky glades. Some of the characteristic plants are common to most of the glades, while others are restricted to a few localities or to a single station.



The term glade is used here for small open areas in the forest where rocks outcropping on the surface prevent the encroachment of most trees and shrubs. The name barren has also sometimes been given to such areas, but it should perhaps be restricted to larger areas or to those with a different type of soil and ecology, and in the Ozark region it is used colloquially for the larger prairie openings which properly are extensions of the Prairie region.

Glades are most abundant in limestone and dolomite areas, but they are also frequently found on sandstone outcrops or on those of igneous rocks in the Iron Mountain sub-region, and in southwestern Missouri on exposures of chert. The type of vegetation differs somewhat with the nature of the rocky outcrop. *Selaginella rupestris*, *Cheilanthes lanosa*, *Crotonopsis elliptica*, *Hypericum gentianoides*, and *Trichostema dichotomum* are characteristic plants of the igneous or siliceous rocky barrens, and other species of *Hypericum* and shrubby species of *Vaccinium* are usually also present.

The chert glades of southwestern Missouri are so distinct in their flora from any other part of the Prairie region that they should be treated separately. They are found in the valleys of Turkey Creek and Shoal Creek, in Jasper and Newton counties, and lie beyond the borders of the Ozark plateau. Solid beds of the Grand Falls Chert of the Mississippian series come to the surface in several places along the borders of streams, and in the depressions of the irregular hummocks there is an accumulation of soil which is generally acid but enriched with alluvium. As the rock is impermeable except where fractured, water also fills the depressions after rains and often remains there until evaporated by the sun. This combination has produced unusual ecological conditions, and a number of plants are found here that are known nowhere else in the state, and others that are known only here and in the trachyte or granite glades of the Iron Mountain sub-region. Most of the characteristic species are of southern or southwestern distribution.

## CHARACTERISTIC PLANTS OF THE CHERT GLADES

<i>Cheilanthes lanosa</i>	<i>Saxifraga texana</i>
<i>Selaginella rupestris</i>	<i>Lathyrus pusillus</i>
<i>Isoetes melanopoda</i>	<i>Crotonopsis elliptica</i>
<i>Cyperus inflexus</i>	<i>Hypericum pseudomaculatum</i>
<i>Scirpus carinatus</i>	<i>Opuntia macrorhiza</i>
<i>Allium mutabile</i>	<i>Opuntia Rafinesquii</i>
<i>Rumex hastatulus</i>	<i>Chaerophyllum texanum</i>
<i>Polygonum tenue</i>	<i>Spermolepis echinata</i>
<i>Arenaria patula</i>	<i>Cynosciadium pinnatum</i>
<i>Talinum parviflorum</i>	<i>Phacelia hirsuta</i>
<i>Talinum calycinum</i>	<i>Euellia carolinensis</i> var. <i>parviflora</i>
<i>Portulaca parvula</i>	<i>Specularia leptocarpa</i>
<i>Portulaca retusa</i>	<i>Coreopsis lanceolata</i>
<i>Selenia aurea</i>	<i>Coreopsis tinctoria</i>
<i>Sedum Nuttallianum</i>	<i>Krigia occidentalis</i>

*Limestone and dolomite glades.*—The list of plants found in the limestone and dolomite glades is a long one, but many of the species are common also to the rocky woods or prairies. Some are found generally in the larger prairie openings or barrens of the Ozark region or on the uplands of the adjoining Prairie region, and a few of them also grow in glades of sandstone or igneous areas. The glades often merge gradually into the rocky woods, and shrubs or small trees may encroach and establish themselves in parts of the glade or about its margins. An invasion of herbaceous woodland species soon follows in such places. Many of the species of the following list are nearly always present in glades of this class, while other are comparatively rare and restricted.

## CHARACTERISTIC PLANTS OF LIMESTONE AND DOLOMITE GLADES

<i>Ophioglossum Engelmanni</i>	<i>Agave virginica</i>
<i>Isoetes Butleri</i>	<i>Nemastylis acuta</i>
<i>Juniperus virginiana</i>	<i>Oxybaphus albidus</i>
<i>Sporobolus asper</i> var. <i>pilosus</i>	<i>Arenaria patula</i>
<i>Sporobolus ozarkanus</i>	<i>Portulaca parvula</i>
<i>Bouteloua curtipendula</i>	<i>Talinum calycinum</i>
<i>Carex Crawei</i>	<i>Clematis Fremontii</i>
<i>Carex Meadii</i>	<i>Sedum pulchellum</i>
<i>Allium mutabile</i>	<i>Delphinium Penardii</i>
<i>Allium stellatum</i>	<i>Delphinium azureum</i> var. <i>Nortonianum</i>
<i>Nothoscordum bivalve</i>	<i>Draba cuneifolia</i>
<i>Camassia hyacinthina</i>	<i>Erysimum asperum</i>

*Lesquerella gracilis*  
*Lesquerella angustifolia*  
*Leavenworthia uniflora*  
*Baptisia vespertina*  
*Psoralea esculenta*  
*Psoralea tenuiflora*  
*Petalostemum purpureum*  
*Petalostemum albidum*  
*Astragalus distortus*  
*Astragalus mexicanus*  
*Euphorbia zygophylloides*  
*Tragia urticaefolia*  
*Ehus canadensis* var. *serotina*  
*Rhamnus caroliniana*  
*Opuntia Rafinesquii*  
*Mentzelia oligosperma*  
*Malvastrum angustum*  
*Oenothera missouriensis*  
*Oenothera speciosa*  
*Chaerophyllum texanum*

*Polytaenia Nuttallii*  
*Cogswellia daucifolia*  
*Phacelia hirsuta*  
*Heliotropium tenellum*  
*Onosmodium hispidissimum*  
*Onosmodium subsetosum*  
*Dodecatheon Meadia*  
*Asclepiodora viridis*  
*Acerates viridiflora*  
*Isanthus brachiatus*  
*Monarda citriodora*  
*Galium virgatum*  
*Houstonia angustifolia*  
*Echinacea pallida*  
*Solidago Gattingeri*  
*Aster sericeus*  
*Aster oblongifolius*  
*Aster ptarmicoides*  
*Thelesperma trifidum*  
*Silphium terebinthinaceum*

In the deep narrow valleys and along the bases of the high bluffs with a northern or eastern exposure, and especially in the rich woods formed by the talus, soil accumulations, and humus, many plants of northern and Appalachian range are found. A few of these were mentioned as growing in such situations along White River, and many of them extend throughout the Ozark region and sometimes beyond along the higher stream bluffs in the Prairie region, or they may grow in more open situations farther north.

#### CHARACTERISTIC PLANTS OF NORTH-FACING BLUFFS OF THE OZARK REGION

*Adiantum pedatum*  
*Athyrium asplenoides*  
*Athyrium angustum* var. *rubellum*  
*Athyrium angustifolium*  
*Cystopteris bulbifera*  
*Cystopteris fragilis*  
*Brachyelytrum erectum*  
*Carex Jamesii*  
*Carex laxiflora*  
*Carex edurnea*  
*Arisaema triphyllum*  
*Uvularia grandiflora*

*Smilacina racemosa*  
*Polygonatum canaliculatum*  
*Erythronium americanum*  
*Erythronium albidum*  
*Trillium sessile*  
*Trillium recurvatum*  
*Cypripedium parviflorum* and var. *pubescens*  
*Juglans cinerea*  
*Asarum canadense*  
*Asarum canadense* var. *reflexum*  
*Thalictrum dioicum*

<i>Hepatica americana</i>	<i>Acer saccharum</i> var. <i>glaucum</i>
<i>Aquilegia canadensis</i>	<i>Dirca palustris</i>
<i>Isopyrum biternatum</i>	<i>Aralia racemosa</i>
<i>Actaea brachypoda</i>	<i>Erigenia bulbosa</i>
<i>Caulophyllum thalictroides</i>	<i>Osmorhiza Claytoni</i>
<i>Sanguinaria canadensis</i>	<i>Osmorhiza longistylis</i>
<i>Dicentra Cucullaria</i>	<i>Cryptotaenia canadensis</i>
<i>Dicentra canadensis</i>	<i>Taenidia integerrima</i>
<i>Corydalis flavula</i>	<i>Thaspium barbinode</i>
<i>Hydrangea arborescens</i>	<i>Thaspium trifoliatum</i> var. <i>flavum</i>
<i>Ribes Cynosbati</i>	<i>Hybanthus concolor</i>
<i>Polygala Senega</i> var. <i>latifolia</i>	<i>Hydrophyllum appendiculatum</i>
<i>Evonymus obovatus</i>	<i>Viburnum molle</i>
<i>Tilia glabra</i>	<i>Solidago caesia</i>
<i>Tilia heterophylla</i> var. <i>Michauxii</i>	<i>Solidago latifolia</i>
<i>Staphylea trifolia</i>	<i>Eupatorium urticaefolium</i>
<i>Acer saccharum</i>	<i>Senecio obovatus</i> var. <i>rotundus</i>

Before summarizing this sketch of the Ozark flora, mention must be made of another interesting plant colony where a number of rare species are found, some of which are not known elsewhere in the state. Mr. B. F. Bush, while collecting in Shannon County many years ago, came upon a locality along Jacks Fork of Current River where high bluffs of magnesian limestone, in places capped by beds of Roubidoux sandstone border the stream. A most unusual assemblage of plants was found here, many of them growing on the dolomite, either at the base of the bluff or along ledges, and others growing on the sandstone either along the top of the bluff or along outcrops a little way back from the stream. Mr. Bush visited this locality a number of times, exploring it thoroughly and collecting and distributing many plants from it. Amongst species of special interest that have been found near Jam-up Bluff, as the high point along the river is known, are *Scirpus planifolius*, *Carex Careyana*, *C. leptalea*, *C. laxiculmis* var. *copulata*, *Zigadenus elegans*, *Cypripedium Reginae*, *Spiranthes lucida*, *Berberis canadensis*, *Potentilla canadensis* var. *villosissima*, *Parnassia grandifolia*, *Hypericum gymnanthum*, *Galium boreale* var. *hyssopifolium*, *Campanula rotundifolia*, *Senecio obovatus* var. *umbratilis*, *Trautvetteria carolinensis*, *Artemisia campestris* var. *caudata*, *Solidago rugosa* var. *aspera*, and

*S. juncea*. Growing in the same locality or near by are the following plants, most of which, although known in other localities in the state, are found here and seem to be part of the association: *Asplenium cryptolepis*, *Veratrum Woodii*, *Cypripedium candidum*, *Ribes Cynosbati*, *Evonymus obovatus*, *Dirca palustris*, *Cornus alternifolia*, and *Solidago caesia*.

While collecting during 1934 and 1935 in Texas County, the junior author came upon a locality in a deep limestone cañon where a number of these rare species were growing under similar conditions, and the two localities are evidently closely associated phytogeographically. The range of most of these species (excluding those that are southern Appalachian) is in the glaciated areas in northern Missouri or farther north beyond the borders of the state, and their presence in the heart of the Ozark region far beyond the recognized limits of glaciation would clearly indicate a relic colony that has survived from the time when this northern flora extended much farther south than it does at present in Missouri. They have held out in peculiarly protected or favored spots after changing ecological conditions had brought about the general destruction or migration of the floras of which they were a part and had replaced them generally with others more adapted to the new conditions.

It has been pointed out that a number of species from the Coastal Plain flora, which in its full development is now found in Missouri only in the Southeastern lowlands, are isolated in the bald knobs of the White River sub-region and in other parts of the Ozarks; and these plants probably constitute one of the oldest recognizable elements in the present plant life of the region, harking back to conditions that prevailed before its last elevation in late Tertiary time. This does not of course necessarily mean that they have occupied continuously the exact locations where they are now found, but merely that they were never entirely exterminated in the region.

Many of the plants of general northeastern and Appalachian distribution now found in the deep cañons and along north-facing bluffs may also have persisted in the region since pre-

glacial times. For the possibility should not be overlooked that some of these species, as well as those of earlier and later periods, may have been developed in the Ozark region and have been dispersed from this center. And it is scarcely likely that extensive immigration could have taken place from the east after the development of the wide flood plains of the Mississippi River, which offers an effective barrier to many upland species.

Finally, the mainly xerophytic plants of southwestern range, which are now found in the glades, on the bald knobs, and along the south-facing bluffs of White River and other streams, and which are the best preserved and most obvious relic colonies in the region, are probably of still more recent origin, and are remnants of a prairie or plains flora that penetrated into central North America during a period of increasing aridity some time subsequent to the final retreat of the glaciers, perhaps within the last few millenia. Relics of this flora are still recognizable as far east as the cedar glades of middle Tennessee and in several adjoining states. It would seem, however, that the climate at this time, while greatly influencing and changing the character of the flora on the uplands, was not sufficiently arid to destroy or drive out all of the northern flora nor even all traces of the old Tertiary forest flora from the protecting valleys in the Ozark region. Conditions at the maximum of this cycle may perhaps have been comparable to those which prevail at present in the Edwards plateau of central Texas, where a number of the peculiar species of the Ozark glades and bald knobs are now found on the limestone hills, and relic colonies of eastern mesophytic species survive in the cañons.<sup>7</sup>

There is abundant evidence of various kinds that such a period of widespread aridity occurred about the time we have indicated, both in America and in the Old World. That it profoundly affected the flora and through it, as well as in other ways, the development and culture of man, groping his way

<sup>7</sup> See Palmer, E. J. Canyon flora of the Edwards Plateau of Texas. *Jour. Arnold Arb.* 1: 233. 1920.



up through savagery or the first stages of civilization, is probable. And so botanical evidence may aid in clarifying or confirming the theories of the climatologists and geologists in working out the story of the past.

#### THE PRAIRIE REGION

The flora of the Ozark region and that of the Prairie region merge gradually into each other in many places, and the boundary between them is nowhere so clearly drawn as that between the Southeastern lowlands and the former. While the generally open treeless character of the uplands distinguishes and gives name to the region, it is really one of transition from the eastern forest that has now reestablished itself over most of the Ozark plateau, and the western prairies. The alluvial valleys of the larger streams were all occupied by narrow strips of forest until largely cleared off since the settlement of the country. The forests are of similiar type to those along the Ozark streams, although a number of the southern species begin to disappear towards the north and a few northern ones to come in. As in the Ozark region, the larger valleys may have remained wooded through the period of more arid climate.

The Prairie region may be separated into two main divisions: the Glaciated and the Unglaciated sub-divisions. The first occupies most of the area north of the Missouri River, except a narrow strip along that stream and along the Mississippi River near their junction, and it also includes small areas to the south of the Missouri, in St. Louis, Saline, Cooper, Lafayette, and Jackson counties. In the small unglaciated areas north of the Missouri River, the flora, as well as the topography along the river bluffs, has more in common with that of the Ozarks, and it has been considered as part of that region.

Stratified rocks of Silurian, Devonian, and Lower Carboniferous age underlie the glacial drift in several of the eastern counties. These earlier Paleozoic rocks are mostly limestones, sometimes carrying chert, and with more limited areas of shale and sandstone. Westward and throughout most of this sub-region the underlying deposits are the sandstones and shales

of the Pennsylvanian series, with local beds of limestone in a few places. Glacial drift, till, or loess covers most of the uplands, but the older stratified rocks come to the surface in places where the drift has been removed, and especially along bluffs of streams. Much of the material brought in by the glaciers has been redistributed both as alluvium in the valleys and gravel bars along the streams and as loess in several parts of the sub-region. As the flora found on the loess hills in the northwestern part of the state is so distinct, it will be described in a separate paragraph.

There is considerable mechanical as well as chemical difference in the soils of the different parts of the glaciated uplands, and they vary greatly in fertility. However, in general they are more uniform over wide areas than are the residual soils of the Ozark region and of the unglaciated prairies. Judging by the character of the flora, neutral or subalkaline soils are most common.

A typical prairie flora, consisting largely of grasses and perennial herbs in which legumes and composites played a conspicuous part, covered the uplands before they were brought under agriculture. Only a few traces of this now remain, the best examples being along the fenced right-of-way of the railroads. Most of the species of this flora are also found in the unglaciated areas farther south. There are few or no trees along the margins of most of the smaller streams, but sometimes there are a few cottonwoods or willows or small thickets of shrubs alternating with the tall grass and ranker growth of herbs. Amongst common species here, besides the black willow and cottonwood, are *Salix cordata*, *S. missouriensis*, *S. interior*, *Prunus americana*, *P. virginiana*, *Amorpha fruticosa*, *Vitis vulpina*, *Cornus asperifolia*, *Cephalanthus occidentalis*, and *Viburnum prunifolium*. Of this list only the choke cherry (*Prunus virginiana*) is practically restricted to the sub-region.

In addition to this widely spread prairie flora of the uplands, which centers in the western plains, and the wooded strips of the alluvial valleys, evident extensions of the eastern and

southern forest, there is a sprinkling of distinctly northern plants that are generally distributed over the glaciated areas of the middle and eastern states. These plants, although forming a comparatively small percentage of the flora, are the most characteristic species in distinguishing this sub-region. Less detailed study of the flora has been done in this sub-region than in any other part of the state, and it is probable that the small list of characteristic species could be considerably increased if systematic collecting were undertaken in all of the counties.

The flora of the loess areas, or where the glacial drift has been redistributed, has little to distinguish it from that of the drift areas except on the terraced bluffs and mound-like hills along the Missouri River in the northwestern corner of the state. So many peculiar plants are found in that locality that it must be regarded as a small but distinct sub-region.

#### CHARACTERISTIC PLANTS OF THE GLACIATED SUB-DIVISION OF THE PRAIRIE REGION

<i>Pteris nodulosa</i>	<i>Ulmus Thomasi</i>
<i>Phalaris arundinacea</i>	<i>Acer nigrum</i>
<i>Phragmites communis</i> var. <i>Berlandieri</i>	<i>Acer Negundo</i> var. <i>violaceum</i>
<i>Calamagrostis canadensis</i> var. <i>Macouni-</i> <i>ana</i>	<i>Vitis vulpina</i>
<i>Allium tricoccum</i>	<i>Asclepias Sullivantii</i>
<i>Smilacina stellata</i>	<i>Lithospermum carolinense</i>
<i>Medeola virginiana</i>	<i>Phlox pilosa</i> var. <i>fulgida</i>
<i>Salix petiolaris</i>	<i>Collomia linearis</i>
<i>Salix cordata</i> var. <i>angustata</i>	<i>Chelone obliqua</i> var. <i>speciosa</i>
<i>Populus tremuloides</i>	<i>Frazinus pennsylvanica</i>
<i>Urtica procera</i>	<i>Sambucus racemosa</i>
<i>Anemone canadensis</i>	<i>Viburnum Lentago</i>
<i>Spiraea alba</i>	<i>Viburnum affne</i> var. <i>hypomalacum</i>
<i>Rosa blanda</i>	<i>Lonicera dioica</i> var. <i>glauescens</i>
<i>Rosa suffulta</i>	<i>Senecio pauperculus</i>
<i>Prunus virginiana</i>	<i>Prenanthes alba</i>
<i>Quercus ellipsoidalis</i>	<i>Artemisia vulgaris</i> var. <i>gnaphalodes</i>
	<i>Antennaria neglecta</i>

Several of the species of this list are quite local within the area and others are not strictly confined to the glaciated areas, but they are typical plants of the northern flora that in a few cases have spread somewhat farther south.

The loess is best developed and attains its greatest thickness above the bluffs of the Missouri River, interruptedly, from the northwest corner of the state to below Kansas City. Because of the rapid and characteristic way in which erosion has worked upon it, a peculiar type of topography, with terraced hills or mounds separated by deep, steep-sided ravines, has been developed. The best examples of this topography are found in Atchison and Holt counties, and a number of plants from the northwestern plains are found here and are restricted to this sub-region.

The alluvial lands along the river are heavily wooded, and many of the forest species extend up the deeper ravines, but rapid erosion and wind action have kept the slopes bare in most places, although a few woody plants are found at the tops of some of the mounds. Occasionally a few cottonwoods and willows and a stunted form of the bur oak grow in such places or on the slopes where they are not too steep. Grasses and other herbaceous plants constitute the bulk of the flora, and some of the plains species reach their eastern limit here. The bear grass (*Yucca glauca*) is one of the most characteristic species. Amongst the few other shrubs are the prairie willow (*Salix humilis*), the lead plant (*Amorpha canescens*), and the downy-leaved red-root (*Ceanothus ovatus* var. *pubescens*). The low oak, *Quercus macrocarpa* var. *olivaeformis*, is abundant in places. It is usually a stout spreading shrub, but may become a small tree in protected situations. The fruit is small and elongated and the leaves are extremely variable in shape.

The incursion of this northwestern flora into the state may have taken place about the same time that the plants of the southwestern plains overran the Ozark region. Due to the somewhat drier conditions that still prevail here and to the rapid rate of erosion, this flora has not had to encounter the competition of the advancing forest that has pressed upon and almost engulfed the xerophytic plains flora to the south, so that it has remained dominant over the small favorable areas of the loess hills.

## CHARACTERISTIC PLANTS OF THE LOESS HILLS

<i>Muhlenbergia cuspidata</i>	<i>Euphorbia serpens</i>
<i>Bouteloua hirsuta</i>	<i>Euphorbia marginata</i>
<i>Bouteloua gracilis</i>	<i>Euphorbia glyptosperma</i>
<i>Sporobolus airoides</i>	<i>Oenothera serrulata</i>
<i>Yucca glauca</i>	<i>Gaura coccinea</i>
<i>Anemone cylindrica</i>	<i>Teucrium occidentale</i>
<i>Chenopodium dakoticum</i>	<i>Pentstemon grandiflorus</i>
<i>Atriplex patula</i>	<i>Castilleja sessiliflora</i>
<i>Quercus macrocarpa</i> var. <i>olivaeformis</i>	<i>Symphoricarpos occidentalis</i>
<i>Cleome serrulata</i>	<i>Liatris acidota</i>
<i>Rosa polyanthema</i>	<i>Heterotheca subaxillaris</i>
<i>Rosa conjuncta</i>	<i>Artemisia vulgaris</i> var. <i>gnaphalodes</i>
<i>Oxytropis plattensis</i>	<i>Cirsium discolor</i>
<i>Astragalus lotiflorus</i>	<i>Lygodesmia juncea</i>
<i>Psoralea argophylla</i>	<i>Lactuca pulchella</i>
<i>Dalea enneandra</i>	<i>Chrysopsis Berlandieri</i>
<i>Glycyrrhiza lepidota</i>	

*Salt licks and saline springs.*—Natural saline areas occur in the form of salt "licks" and saline springs, and are found in portions of the prairie region, particularly the glaciated prairie, in areas adjacent to streams and usually in territory of low relief. They reach their greatest development in middle Missouri in Saline, Randolph, Howard, and Cooper counties. The soil immediately around such springs is heavily charged with concentrated alkaline salts, and supports an unusual assemblage of plants, some of which are known only from such places. *Typha angustifolia* and *Eleocharis parvula* have been found in marshy ground around certain saline springs, and are known in Missouri only from these stations. Floating in the water of the springs or branches from them are clumps of *Zanichellia palustris*, *Potamogeton pectinatus*, *Callitriche heterophylla*, and species of *Chara* and *Nitella*. Other species which are found around the saline springs include *Scirpus americanus*, *S. fluviatilis*, *Typha latifolia*, *Diplachne fascicularis* and *D. acuminata*, *Atriplex rosea* and *A. patula* var. *hastata*, *Polygonum aviculare* and var. *angustissimum*, *Echinochloa pungens*, and many others.

*The Unglaciated sub-division of the Prairie region.*—There is no even approximate natural boundary between the Ozark

region and the unglaciated part of the Prairie region to the west of it as is formed by the Missouri River on the north, and the line of demarcation is often very irregular and indefinite, with the Ozark flora dominant on broken rocky ground along streams and the prairie flora occupying the more level and open parts of the uplands over a wide transition zone. This is particularly noticeable in areas of Mississippian limestone and chert, which is the surface formation along most of the border line, with an increasing width towards the south. As the soils of the uplands are all residual, it is easy to account for this rather sharp contrast between the flora growing on different geological formations. West of this belt of limestone and over most of the sub-region the sandstones and shales of the Pennsylvanian series are the surface rocks. Because of the comparatively soft character of these formations some of the streams have developed broad shallow valleys, subject to frequent overflow, and with numerous small shallow lakes and sloughs in which many aquatic and semi-aquatic plants flourish. These wide flood plains are particularly well developed along the Grand and Marais des Cygnes rivers and some of their small tributaries. *Typha latifolia*, *Leersia virginica*, *L. oryzoides*, *Spartina pectinata*, *Nelumbo pentapetala*, *Nympho-zanthus advena*, *Ceratophyllum demersum*, *Jussiaea diffusa*, *Myriophyllum scabratum*, *Proserpinaca palustris* var. *crebra*, and species of *Potamogeton* and *Sagittaria* are characteristic of such places. The pin oak (*Quercus palustris*) is abundant along the smaller streams and in the borders of low woods, and the pecan (*Carya illinoensis*) in somewhat drier situations.

The true prairie flora of the uplands is quite similar to that of the Glaciated sub-division just described, but with an increasing proportion of southwestern species towards the south. Other conspicuous differences in the two sub-divisions are the absence of most of the characteristic northern plants to which attention was called in the last list, and in the greater variety of trees and shrubs found along the streams.

The prairie flora has been better preserved here than in the northern part of the state, due to the fact that large tracts have



been kept as grazing lands as well as for putting up hay of the native grasses. In the big prairie hay fields of Vernon, Barton, and Jasper counties, as well as along the railways, fine examples of the native flora can be seen. The prairies here are very attractive at different seasons, with a profusion of flowering plants, many of them of brilliant colors. With the first warm days of spring little drabas, March lily (*Erythronium mesochoreum*), spring beauty, prairie anemone (*Anemone caroliniana*), buttercups, violets, and bluets (*Houstonia minima*) begin to appear; and these are followed quickly by wild hyacinth (*Camassia hyacinthina*), spiderwort (*Tradescantia canaliculata*), wild roses, blue-, yellow-, and white-flowered wild indigo (*Baptisia vespertina*, *B. leucophaea*, and *B. leucantha*), bush clover, prairie clover (*Petalostemum purpureum* and *P. candidum*), wild senna, shooting star, phlox, Indian blanket, larkspur (*Delphinium Penardi*), gromwell (*Lithospermum canescens* and *L. angustifolium*), and coreopsis (*Coreopsis grandiflora*). Later come butterfly-weed, milk-weed, horse-mint, gerardias, wine cups (*Callirhoë digitata*), blazing star (*Liatris scariosa* and *L. pycnostachya*), ironweeds, rosinweeds, and many species of asters and solidagos.

On the Barton upland, in the southwestern part of Barton County and the northwestern part of Jasper County, a number of peculiar plants have been found, some of which are known nowhere else in the state. The upland prairies here have a sandy soil, with blocks of residual sandstone scattered over the surface and ledges sometimes outcropping, producing little glades or barrens; and along the small intermittent streams are small boggy areas with an acid type of soil. Some of the plants found here are *Andropogon ternarius*, *Setaria geniculata*, *Panicum scoparium*, *Rynchospora capitellata*, *R. cymosa*, *Scleria ciliata*, *Scirpus carinatus*, *Carex arkansana*, *Juncus interior*, *J. effusus* var. *solutus*, *J. validus*, *J. nodatus*, *Geocarpon minimum*, *Anemone caroliniana*, *Ranunculus oblongifolius*, *Crotonopsis elliptica*, *Saxifraga texana*, *Rhexia interior*, *Marshallia caespitosa*, and *Chrysopsis pilosa*.

CHARACTERISTIC PLANTS OF THE UNGLACIATED SUB-DIVISION  
OF THE PRAIRIE REGION

<i>Sagittaria ambigua</i>	<i>Rubus Bushii</i>
<i>Andropogon saccharoides</i>	<i>Ammannia auriculata</i>
<i>Sporobolus ozarkanus</i>	<i>Lotus americanus</i>
<i>Tripsacum dactyloides</i>	<i>Rotula ramosior</i> var. <i>interior</i>
<i>Panicum scoparium</i>	<i>Rhexia interior</i>
<i>Schedonnardus paniculatus</i>	<i>Asclepias syriaca</i> var. <i>kansana</i>
<i>Koeleria cristata</i>	<i>Sabatia campestris</i>
<i>Fimbristylis autumnalis</i>	<i>Lobelia spicata</i> var. <i>hirtella</i>
<i>Carex oklahomensis</i>	<i>Agalinis fasciculata</i>
<i>Carex Bicknellii</i>	<i>Gutierrezia dracunculoides</i>
<i>Juncus validus</i>	<i>Solidago gymnospermoides</i>
<i>Erythronium mesochoreum</i>	<i>Helianthus salicifolius</i>
<i>Sisyrinchium campestre</i> var. <i>kansanum</i>	<i>Artemisia vulgaris</i> var. <i>ludoviciana</i>
<i>Anemone caroliniana</i>	<i>Marshallia caespitosa</i>
<i>Draba reptans</i>	<i>Aster paludosus</i>

Many of the most abundant and striking plants of the unglaciated prairies are of wide distribution throughout the state and therefore cannot be included amongst the distinctive plants of the sub-division, although, since they often dominate the flora and give character to it, they are in a sense characteristic. Most conspicuous amongst these may be mentioned *Andropogon scoparius* var. *frequens*, *A. provincialis*, *Sorghastrum nutans*, *Tradescantia canaliculata*, *Camassia hyacinthina*, *Ranunculus fascicularis*, *Delphinium Penardi*, *Rosa setigera* var. *tomentosa*, *Desmanthus illinoensis*, *Schrankia uncinata*, *Cassia fasciculata*, *Baptisia leucophaea*, *B. leucantha*, *Petalostemum purpureum*, *P. candidum*, *Astragalus mexicanus*, *Amorpha canescens*, *Desmodium illinoense*, *D. canadense*, *D. sessilifolium*, *Lespedeza capitata*, *Linum medium*, *Polygala incarnata*, *Croton capitatus*, *Euphorbia corollata*, *Callirhoë digitata*, *Viola sagittata*, *Jussiaea diffusa*, *Gaura biennis*, *Oenothera biennis*, *Eryngium yuccifolium*, *Ptilimnium Nuttallii*, *Cicutula maculata*, *Polytaenia Nuttallii*, *Apocynum cannabinum*, *Asclepiodora viridis*, *Asclepias tuberosa*, *A. incarnata*, *A. verticillata*, *Acerates viridiflora*, *A. hirtella*, *Phlox pilosa*, *Lithospermum canescens*, *L. angustifolium*, *Verbena stricta*, *V. canadensis*, *Physostegia virginiana*, *Monarda mollis*, *Castilleja coccinea*, *Pentstemon tubiflorus*, *P. Digitalis*, *Houstonia*

*minima*, *Vernonia crinita*, *V. Baldwini*, *V. missurica*, *Liatris scariosa*, *L. pycnostachya*, *Solidago glaberrima*, *S. speciosa*, *S. altissima*, *Aster praealtus*, *A. ericoides* var. *prostratus*, *Antennaria plantaginifolia*, *Silphium laciniatum*, *S. integrifolium*, *Rudbeckia subtomentosa*, *Echinacea pallida*, *Ratibida pinnata*, *Helianthus rigidus*, *H. mollis*, *H. grosse serratus*, *H. hirsutus*, *Coreopsis tripteris*, *C. palmata*, and *Cacalia tuberosa*.

Besides the main plant regions and their sub-divisions and the isolated colonies of relic plants which have been described, a number of species have been found only in a single locality or in a few widely separated localities in the state, and several others seem to be confined to a single geological formation.

*Thelypteris spinulosa*, *Saxifraga pensylvanica* var. *Forbesii*, and *Sullivantia renifolia* have been found only on outcrops of St. Peter sandstone, near the Mississippi and Missouri Rivers from Jefferson to Montgomery counties. Somewhat farther south in the Iron Mountain area, *Dennstaedtia punctilobula*, *Lycopodium complanatum* var. *flabelliforme*, *Goodyera pubescens*, and *Viola pallens* are known only very locally on the La Motte sandstone. *Pedicularis lanceolata*, a species which is usually known only from much farther north than Missouri, west of the Mississippi, has been found in acid bogs in Iron, Shannon, Morgan, and Greene counties. In the central part of the Ozark region *Silene Wherryi*, a plant of the southern Appalachians, has been collected in Phelps, Pulaski, Dent, Douglas, Shannon, Texas, and Laclede counties, where it grows in cherty woods. *Zigadenus Nuttallii* and *Eriogonum longifolium* have been found only in Oregon County. In the limestone glades of Jackson and Cass counties *Cogswellia daucifolia* is locally abundant, although it is known from no other locality in the state. The general range of this species is westward through Nebraska to Texas, and it is a curious fact that *Clematis Fremontii*, with a similar general range, has been found only in limestone glades on the opposite side of the state. *Geocarpon minimum*, a very interesting little plant both because of its rarity and also because it seems to be in some respects a connecting link between the plant families

Aizoaceae and Caryophyllaceae, was discovered in sandstone glades in Jasper County, and it is so far known from no other locality. *Epipactis latifolia* has been found in the same county, and this is apparently the only record for this species west of Pennsylvania. There seems to be no doubt that it is native at this station. *Amsonia ciliata* var. *tenuifolia* is growing abundantly in glades of the bald knob type in Ozark and Douglas counties, and these are also the only known localities for it in the state. Mention has already been made of a number of other similar instances in describing the Jam-up Bluff locality of Shannon County and the glades and bald knobs of other parts of the state, and the list of such species could probably be considerably lengthened.

Several distinctly southern or coastal species of the Southeastern lowlands again appear in the extreme southwestern part of the state. Amongst these are *Scirpus carinatus*, *Paspalum floridanum*, *Triodia stricta*, *Leersia lenticularis*, *Melothria pendula*, *Mecardonia acuminata*, and *Agalinis viridis*. Some of these wide gaps in distribution may be filled in by future discoveries, and in some cases at least they would seem to indicate a former wider distribution of the species in the intervening areas.

More than 10 per cent of the plants included in the present catalogue have been introduced into the state since the settlement of the country by Europeans. Most of these are weeds or grasses that grow in waste places or in cultivated ground. Many of them have become thoroughly established and common, and in some cases they are crowding out to a great extent the native species which find themselves unable to compete with them. Some of our introduced plants were formerly cultivated for their supposed medicinal value or for other uses, and others were first grown as ornamental plants in old gardens. The day-lily, blackberry lily, Queen Anne's lace, hoarhound, catnip, motherwort, matrimony-vine, Gill-over-the-ground, butter-and-eggs, bouncing Bet, and teasel are familiar examples of these.

Most of the introduced plants are very adaptable and con-

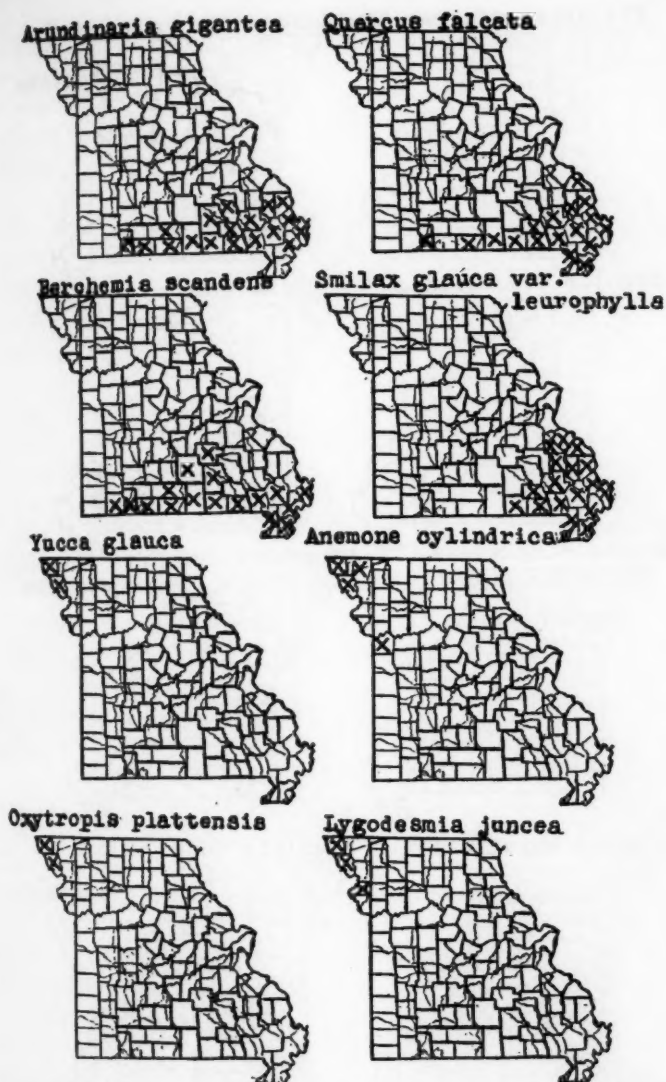


Fig. 3. Showing occupation of three species in the Southeastern lowlands and in the White and Current River systems (first three maps); of *Smilax glauca* in the Southeastern lowlands; and of four species in the loess mounds (lower four maps). Since the maps were made, *Arundinaria gigantea* has been found in Pemiscot, Dunklin, Barry, and McDonald counties, and *Quercus falcata* in Barry Co.

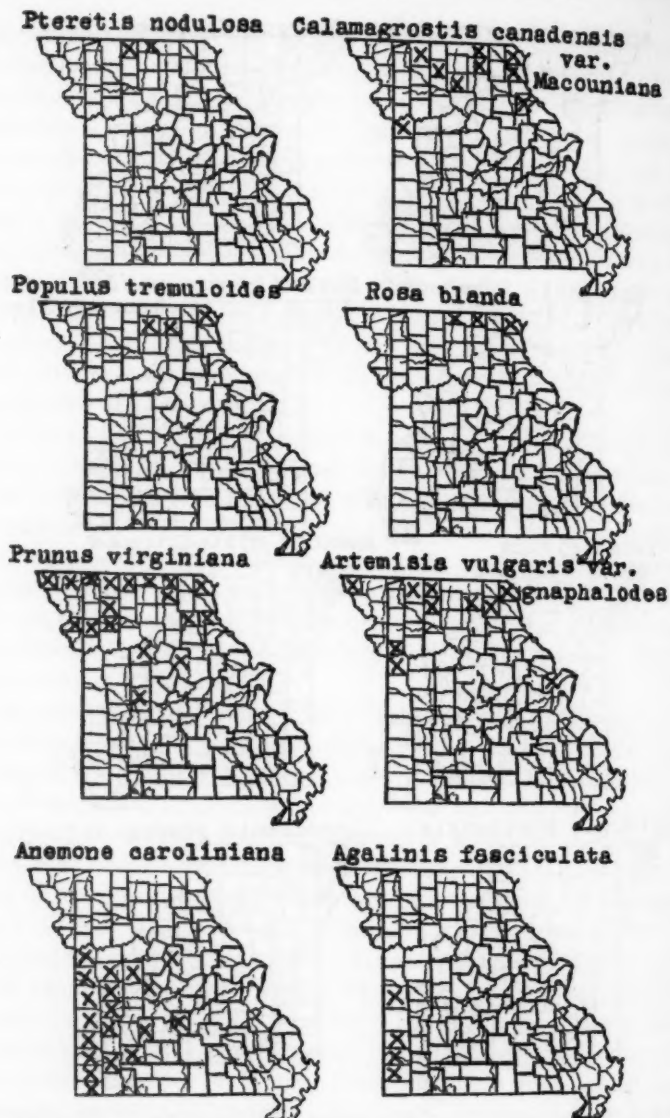


Fig. 4. Showing occupation of species in the glaciated prairie region of northern and central Missouri (upper six maps); of two species in the unglaciated region (lowest two maps).



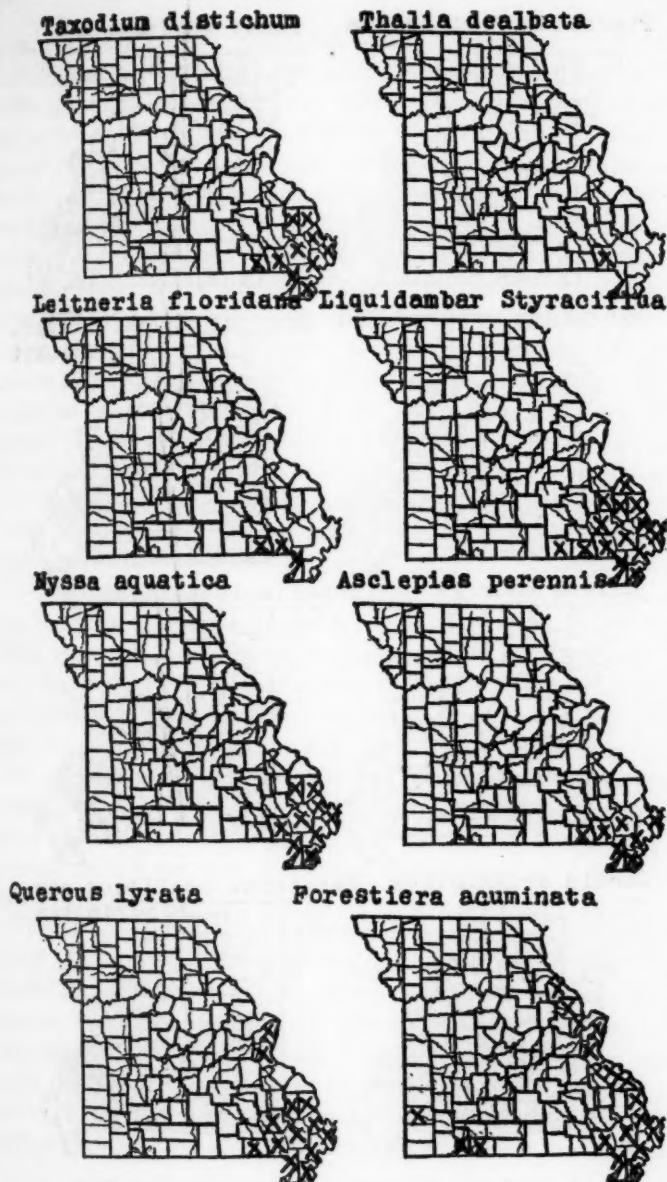


Fig. 5. Showing occupation of species in the Southeastern lowlands (upper six maps); species extending outside the limits of this region (lowest two maps).

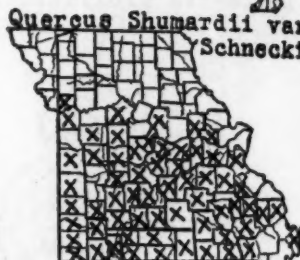
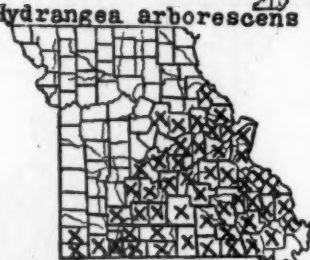
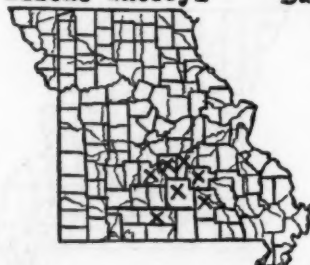
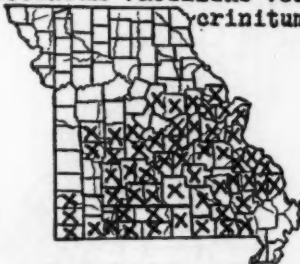
*Pteridium latiusculum**Pinus echinata**Hydrangea arborescens**Quercus Shumardii* var. *Schneckii**Silene Wherryi**Bumelia lanuginosa**Cunila origanoides**Vaccinium vacillans* var. *crinitum*

Fig 6. Distribution of eight species occupying the Ozark region.

sequently they are not restricted to any type of soil, and their distribution has little significance or relation to the native flora. In a few cases, however, they seem to be limited to certain areas or environments and to show little disposition to spread beyond them. Amongst such plants are the Japanese clover (*Lespedeza striata*), common only in rocky ground in the Ozark region although sometimes found elsewhere, *Heliotropium indicum* and *Perilla frutescens* that seem inclined to spread only in the southern counties, the teasel, which seems to establish itself mainly along rocky stream beds in the eastern and southern counties, and the recently introduced *Tamarix gallica*, which, judging by its behavior in other sections, is likely to spread along the margins of the great rivers but scarcely beyond them. Southern species, such as *Arundo Donax* and the water hyacinth (*Eichhornia crassipes*), if they persist will probably be confined to the Southeastern lowlands.

The number and relative proportion of introduced plants tend constantly to increase as the country becomes more thickly settled and as means of transportation and communication multiply. Many of them have been brought in by railroads, either in ballast or merchandise or in the cleanings of cars, and new immigrants are often first noticed along railways or about railroad centers. Although some of them show little tendency to spread far beyond the place of introduction, others extend their range rapidly and in a few years cover large sections or all parts of the state. The rapid spread in recent years of the white- and yellow-flowered sweet clover and of *Torilis Anthriscus* and *Helenium tenuifolium* is a good example of this.

The great majority of our weed immigrants are of European origin; others came originally from Asia, and a few from South America or other parts of the world. Some weedy species, and others that would scarcely be called weeds, have been introduced into the state from the West or from other parts of North America, and in some cases species that are native in one part of the state have been introduced into other sections where they are now established. This is sometimes

confusing in considering the natural distribution of species and its significance, and attention is called to some of these in the notes accompanying the catalogue.

Species which are found native in some part of the United States are printed in bold-face type, while the introduced species (i. e., native of some country other than the United States) appear in Roman capitals.

The maps and descriptions of the different plant regions of the state, with the lists of characteristic plants found in them, will serve to give some idea of the diversity and richness of the flora of Missouri and of the varied elements that enter into it.

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## ANNOTATED LIST OF MISSOURI PLANTS

### SPERMATOPHYTES

#### Fam. PINACEAE

*Pinus echinata* Mill. Southern Yellow Pine.

Dry uplands, rocky slopes and bluffs, and sometimes alluvial woods along streams, in sandstone, chert, granitic or porphyritic trachyte areas, in mixed growth with deciduous trees or locally in pure stands. Oxylophile. Southern Mo., south of a line from Franklin to McDonald counties: Franklin, Jefferson, Washington, Ste. Genevieve, Perry, Bollinger, Madison, Wayne, St. Francois, Butler, Iron, Reynolds, Shannon, Carter, Ripley, Oregon, Howell, Crawford, Texas, Dent, Phelps, Pulaski, Wright, Douglas, Ozark, Taney, Stone, Christian, Barry, and McDonald counties.

The Austrian pine, *Pinus nigra* Arnold, has been found locally established in woods in St. Louis Co., and the scrub pine, *Pinus virginiana* Mill., has been found in woods and open slopes in Callaway Co. The Scotch pine, *Pinus sylvestris* L., and the white pine, *Pinus strobus* L., are often planted but do not appear to establish themselves away from cultivation, and should not be considered as additions to the state flora.

**Taxodium distichum** (L.) Richard. Bald Cypress.

Swamps, bayous, and flood plains of streams. Oxylophile to circumneutral. Southeastern Mo.: Cape Girardeau, Bollinger, Scott, Mississippi, Stoddard, New Madrid, Pemiscot, Dunklin, Butler, and Ripley counties.

**Juniperus virginiana** L. Red Cedar.

Glades, bluffs, and borders of woods, on limestone or dolomite, and rarely on siliceous or granitic rocks. Calciphile to circumneutral. General, but commonest in the Ozark region.

**Juniperus virginiana** var. *crebra* Fernald & Griseb., Rh. 37: 133. 1935.

Borders of woods and glades or bluffs. Circumneutral. Eastern Mo.: Lewis and Jefferson counties.

**Juniperus mexicana** Spreng. White Cedar.

*Juniperus Ashei* Buchholz, Bot. Gaz. 90: 329, figs. 1, 2. 1930.

*Juniperus sabinooides* Nees.

Glades and dolomite bluffs of White River. Calciphile. Southwestern Mo.: Barry Co.

### FAM. TYPHACEAE

**Typha latifolia** L. Common Cat-tail.

Swamps and muddy margins of ponds and streams. Circumneutral. General.

**Typha angustifolia** L. Narrow-leaved Cat-tail.

Muddy borders and in shallow water of saline spring-fed lake. Calciphile. Local: Saline Co. This has often been confused with narrow-leaved and slender-spiked forms of *T. latifolia*.

### FAM. SPARGANIACEAE

**Sparganium eurycarpum** Engelm. Bur-reed.

Swamps and borders of ponds and streams. Circumneutral. General but not common: St. Charles, St. Louis, Clay, and Jackson counties.

**Sparganium americanum** Nutt. See Rh. 24: 27, 33. 1922. Bur-reed.

*Sparganium androcladum* of auth., not Morong (B & B).

*Sparganium americanum* var. *androcladum* Fernald & Eames, not *S. simplex* var. *androcladum* Engelm. (G).

In spring branches and margins of streams and swales. Circumneutral to calciphile. Southern and central Mo.: St. Louis, Jefferson, St. Francois, Bollinger, Ripley, New Madrid, Dunklin, Reynolds, Carter, Phelps, Dent, Shannon, Texas, Howell, Camden, Jackson, Greene, Jasper, and Newton counties.

*Spartanium androcladum* (Engelm.) Morong. See Rh. 24: 27, 32. 1922. Bur-reed.

*Spartanium lucidum* Fernald & Eames (G), (B & B).

Borders of ponds and swales. Circumneutral. Southern and central Mo.: St. Louis, Jefferson, Iron, St. Francois, Scott, Dunklin, Boone, Cass, Greene, and Jackson counties.

#### FAM. NAJADACEAE

*Potamogeton pulcher* Tuckerm. Spotted Pondweed.

Slow streams and ponds. Circumneutral. Eastern Mo., south of the Missouri River: St. Louis, Jefferson, Franklin, Dent, Texas, Shannon, Iron, and Ripley counties. This species has sometimes been confused with *Potamogeton natans* which is not known in Mo.

*Potamogeton amplifolius* Tuckerm. Large-leaved Pondweed.

Sloughs, streams, ponds, spring branches, and in lakes fed by cold springs. Circumneutral. Southern and central Mo.: Dallas, Morgan, Camden, Howell, Texas, Douglas, and Ozark counties.

*Potamogeton illinoensis* Morong.

Sloughs and slow waters along streams. Circumneutral. Southeastern Mo., local: Ripley Co. This species has sometimes been confused with *Potamogeton americanus*, a common species in Mo.

*Potamogeton americanus* Cham. & Schlecht. Long-leaved Pondweed.

Ponds and rivers. Circumneutral. Southern and central Mo.: St. Louis, Jefferson, Franklin, St. Francois, Iron, New Madrid, Dunklin, Ripley, Gasconade, Osage, Pulaski, Camden, Miller, Laclede, Taney, Jackson, Jasper, and Newton counties.

*Potamogeton lucens* L. Shining Pondweed.

Slow-flowing streams, springs, and spring branches, and in lakes fed by cold springs. Circumneutral to calciphile. Southeastern and middle Mo.: Perry, Iron, Wayne, Dunklin, Reynolds, Shannon, Carter, Pulaski, and Laclede counties.

*POTAMOGETON CRISPUS* L. Curly Muck-weed.

Ponds, sloughs, and lakes fed by cold springs. Circumneutral. Southern Mo.: Crawford and Newton counties.

*Potamogeton foliosus* Raf. var. *genuinus* Fernald, Mem. Am. Acad. 17: 43. 1932.

Streams, springs, and ponds. Circumneutral to calciphile. General: St. Louis, Wayne, Butler, Shannon, Carter, Reynolds, Oregon, Howell, Macon, Boone, Morgan, Camden, Pulaski, Laclede, Dallas, Wright, Greene, Christian, Ozark, Douglas, Platte, Clay, Jackson, Bates, Jasper, and Barry counties.

*Potamogeton foliosus* var. *macellus* Fernald, Mem. Am. Acad. 17: 46. 1932.

*Potamogeton foliosus* Raf. in part (G).

Similar situations to the preceding. Circumneutral to calciphile. Southern, central, and western Mo.: St. Louis, Butler, Crawford, Reynolds, Boone, Miller, Laclede, Howell, Platte, Bates, Jasper, and Christian counties.

*Potamogeton panormitanus* Bivona-Bernardi var. *major* G. Fischer.

Slow streams and ponds. Circumneutral. Middle Mo., local: Benton Co.

**Potamogeton panormitanus** var. *minor* Biv.

Slow streams. Circumneutral. Southern Mo.: Perry and Laclede counties.

**Potamogeton diversifolius** Raf. See Mem. Am. Acad. 17: 105-106. 1932. Pondweed.

*Potamogeton dimorphus* of Am. auth. in part, not Raf. (G), (B & B).

*Potamogeton Spirillus* of Am. auth. in part, not Tuckerm.

*Potamogeton hybridus* of Am. auth. in part, not Michx. (G).

Streams and ponds. Circumneutral. General: Scotland, Monroe, Audrain, Callaway, St. Louis, Bollinger, Wayne, Butler, Dent, Shannon, Oregon, Caldwell, Ray, Clay, Jackson, Henry, Greene, Wright, Webster, Ozark, Taney, and Jasper counties.

**Potamogeton pectinatus** L. Fennel-leaved Pondweed.

Ponds and streams. Calciphile to circumneutral. General but scattered: St. Louis, Perry, Ripley, Osage, Phelps, Saline, Atchison, Buchanan, and Platte counties.

**Potamogeton rotundatus** Hagst.

Ponds and slow streams. Circumneutral. Local: St. Louis Co.

**Najas guadalupensis** (Spreng.) Morong. See Rh. 25: 107. 1923. Naiad.

Marshes and shallow water of streams. Circumneutral. Central and southern Mo.: St. Louis, St. Francois, Iron, Reynolds, Ripley, Phelps, Dent, Shannon, Texas, Boone, Laclede, Greene, Platte, Jackson, and Vernon counties.

**Zannichellia palustris** L. Horned Pondweed.

Marshy and springy ground, and in ponds and shallow streams, frequently in saline marshes and springs. Calciphile to circumneutral. General but scattered: Clark, St. Louis, Jefferson, Perry, Randolph, Cooper, Saline, Maries, Miller, Dent, Reynolds, Carter, Oregon, Texas, Crawford, Laclede, Dallas, Jackson, and Newton counties.

**Ruppia maritima** L. var. *rostrata* Agardh. Ditch-grass.

Ponds and shallow streams. Local: Henry Co.

## Fam. ALISMACEAE

**Sagittaria longirostra** (M. Micheli) J. G. Smith. Long-beaked Arrow-head.

Scattered and uncommon: Henry and Jasper counties.

All of the Missouri species of *Sagittaria* are found in shallow water or on muddy borders of sloughs, ponds, and sluggish streams, most frequently in circumneutral or alkaline soils.

**Sagittaria latifolia** Willd. Broad-leaved Arrow-head.

General and common.

**Sagittaria latifolia** f. *obtusata* (Muhl.) Robinson.

Frequent with the typical form. General.

**Sagittaria brevirostra** Mack. & Bush. Short-beaked Arrow-head.

General and common.

**Sagittaria ambigua** J. G. Smith. Lance-leaved Sagittaria.

Southwestern Mo.: Barton, Jasper, and Newton counties.



***Sagittaria heterophylla* Pursh.**

Scattered: Callaway, Boone, Jackson, Dent, Texas, Howell, Wright, Ozark, Webster, and Greene counties.

***Sagittaria heterophylla* var. *elliptica* Engelm.**

Scattered: St. Louis and Boone counties.

***Sagittaria heterophylla* var. *angustifolia* Engelm.**

Scattered: Greene and Texas counties.

***Sagittaria graminea* Michx. Grass-leaved *Sagittaria*.**

General but scattered: St. Louis, Butler, Texas, Carroll, Jackson, Jasper, Lawrence, Greene, and Taney counties.

***Sagittaria platyphylla* (Engelm.) J. G. Smith.**

Southeastern Mo.: Dunklin and Butler counties.

***Lophotocarpus calycinus* (Engelm.) J. G. Smith.**

Shallow water and muddy margins of sloughs, ponds, and sluggish streams. Calciphile to circumneutral. General.

***Echinodorus tenellus* (Martius) Buchenau. Bur-head.**

Wet ground about ponds and sloughs. Circumneutral. Local: St. Louis Co.

***Echinodorus cordifolius* (L.) Griseb. Bur-head.**

Swamps and muddy banks. Circumneutral. Scattered, mostly along the larger rivers: Lincoln, St. Louis, Franklin, Mississippi, Ripley, and Jackson counties.

***Echinodorus cordifolius* var. *lanceolatus* (Engelm.) Mack. & Bush.**

Similar situations to the preceding. Circumneutral. Scattered: Clay and Jackson counties.

***Echinodorus radicans* (Nutt.) Engelm. Creeping Bur-head.**

Swamps and wet woods. Circumneutral. Southeastern Mo., and north along Mississippi River: St. Louis, Jefferson, Stoddard, New Madrid, Dunklin, and Butler counties.

***Alisma subcordatum* Raf. See Arkiv f. Bot. 24A: 19. 1932. Water Plantain.**

*Alisma Plantago-aquatica* of Am. auth. in part, not L. (G).

Swamps and muddy borders of sloughs, ponds, and sluggish streams. Circumneutral. General. This has been confused with *Alisma Plantago-aquatica* and subsp. *brevipes* (as defined by Samuelsson) which do not occur in Mo.

***Vallisneria americana* Michx. See Rh. 20: 108. 1918. Eel-grass.**

*Vallisneria spiralis* of Am. auth., not L. (G), (B & B).

Slow streams. Circumneutral. Eastern Mo., south of the Missouri River: St. Louis, Jefferson, Franklin, Gasconade, Phelps, Iron, Butler, Carter, and Ripley counties.

### Fam. HYDROCHARITACEAE

***Anacharis occidentalis* (Pursh) Victorin, Contr. Lab. Bot. Univ. Montreal, No. 18: 40. 1931; see also Rh. 34: 114-116. 1932. Water-weed.**

*Elodea canadensis* Michx. in part (G).

*Philotria canadensis* (Michx.) Britton in part (B & B).

Ponds, pools, and sloughs, on the surface of stagnant water, in springs and spring branches, and margins of streams. Circumneutral to calciphile. South-

ern and central Mo.: Boone, Lincoln, St. Charles, St. Louis, Jefferson, Crawford, Madison, Reynolds, Carter, Butler, Dunklin, Ripley, Oregon, Shannon, Texas, Osage, Cole, Miller, Phelps, Pulaaki, Dallas, Camden, Laclede, Wright, Douglas, Ozark, Jackson, and Jasper counties.

**Limnobia Spongia** (Bosc) Richard. American Frog-bit.

Streams and sloughs. Circumneutral. Southeastern Mo., local: Dunklin Co.

### Fam. GRAMINEAE

**Arundinaria gigantea** (Walt.) Chapm. See Am. Jour. Bot. 21: 127. 1934; also Bull. Torr. Bot. Club 56: 315-318. 1929. Switch Cane, Giant Cane.

*Arundinaria macrosperma* Michx. (G), (B & B), in part.

*Arundinaria tecta* (Walt.) Muhl. (G), (B & B), in part.

Low wet woods and moist ground along bluffs. Circumneutral. Southern Mo., mostly in the southeastern lowlands and along White River and its tributaries: Bollinger, Cape Girardeau, Scott, Mississippi, Stoddard, New Madrid, Pemiscot, Dunklin, Butler, Wayne, Ripley, Carter, Reynolds, Oregon, Shannon, Howell, Douglas, Ozark, Taney, Stone, Barry, and McDonald counties.

**Bromus breviaristatus** Buckley.

Introduced in Jackson Co.

**Bromus catharticus** Vahl. See Am. Jour. Bot. 21: 127. 1934.

*Bromus unioloides* (Willd.) HBK. (B & B).

Waste ground. Western Mo., local: Jackson Co.

**BROMUS INERMIS** Leyss. Hungarian Brome Grass.

Introduced in fields, waste ground, and roadsides. Scattered: St. Louis, Boone, Jackson, and McDonald counties.

**BROMUS TECTORUM** L.

Introduced in fields and waste ground. Indifferent. General.

**Bromus purgans** L. Wild Chess.

Rocky or rich woods and bluffs. Circumneutral to calciphile. General.

**Bromus latiglumis** (Scribn.) Hitchc. See Rh. 35: 316. 1933.

*Bromus purgans* var. *latiglumis* (Scribn.) Shear.

*Bromus altissimus* Pursh, not Gilib. (G).

Woods and bluffs. Calciphile. Eastern Mo.: Clark, St. Louis, and Jefferson counties.

**Bromus latiglumis f. incanus** (Shear) Fernald, Rh. 35: 316. 1933.

*Bromus altissimus f. incanus* (Shear) Wiegand.

*Bromus incanus* (Shear) Hitchc. (G), (B & B).

Wooded banks. Calciphile. Western Mo.: Jackson Co.

**BROMUS SECALINUS** L. Chess, Cheat.

Fields and waste ground. Indifferent. General.

**BROMUS MOLLIS** L. See Am. Jour. Bot. 21: 128. 1934. Soft Chess.

*Bromus hordeaceus* of auth., not L. (G), (B & B).

Introduced in waste ground and along railways. Scattered: St. Louis and Jackson counties.

*BROMUS RACEMOSUS* L. See Rh. 24: 90. 1922.

Introduced along roadsides, railways, and in waste ground. Indifferent. Scattered: St. Louis, Jackson, Vernon, and Jasper counties.

*BROMUS COMMUTATUS* Schrad. See Rh. 24: 90. 1922.

Introduced in fields and waste ground. Indifferent. Scattered: Iron, Boone, Clay, Jackson, Webster, and Jasper counties.

*BROMUS AVERNENSIS* L. Field Chess.

Introduced in fields and waste ground. Indifferent. Scattered: Lewis, Audrain, Jefferson, Boone, Dekalb, Jackson, and Jasper counties.

*BROMUS JAPONICUS* Thunb.

Introduced in fields, waste ground, and roadsides. Indifferent. Scattered: Boone and Jackson counties.

*Festuca octoflora* Walt. Slender Fescue Grass.

Fields, prairies, glades, rocky open or dry woods, and waste ground. Oxylophile. Southern and central Mo. south and east of a line drawn from St. Louis and Morgan counties to Vernon Co.

*Festuca octoflora* var. *tenella* (Willd.) Fernald, Rh. 34: 209. 1932.

Similar situations to the preceding. Oxylophile. General and common. This is the commonest variety found in Mo.

*Festuca octoflora* var. *glauca* (Nutt.) Fernald, Rh. 34: 209. 1932.

Similar situations to the preceding. Oxylophile. Southern and central Mo. south and east of a line drawn from St. Louis, Callaway, and Morgan counties to Vernon Co.

*Festuca sciurea* Nutt.

Rocky or sandy open ground. Oxylophile to circumneutral. Southern Mo., scattered: Dunklin and Jasper counties.

*FESTUCA ELATION* L. Meadow Fescue.

Meadows, open woods, and waste ground. Circumneutral. General.

*Festuca obtusa* Spreng.

*Festuca nutans* Spreng. (G), (B & B).

Rocky or rich woods; bluffs, alluvial ground along streams, and waste ground. Circumneutral. General.

*Festuca Shortii* Kunth.

Moist open ground and woods. Circumneutral. General but scattered: Clark, St. Louis, Jefferson, Dent, Shannon, Boone, Jackson, and Jasper counties.

*Glyceria acutiflora* Torr.

Margins of ponds, in shallow water. Circumneutral. Southern Mo.: Dent, Texas, Howell, Wright, Webster, and Ozark counties.

*Glyceria arkansana* Fernald, Rh. 31: 49. 1929.

Swampy ground. Circumneutral. Southeastern Mo.: Dunklin, Butler, and Ripley counties.

*Glyceria septentrionalis* Hitchc. Floating Manna Grass.

Borders of sloughs, wet open woods, and meadows. Circumneutral. Northern and central Mo.: Scotland, St. Louis, Jefferson, Livingston, and Jackson counties.

***Glyceria pallida* (Torr.) Trin. Pale Manna Grass.**

Swampy ground. Circumneutral. Southeastern Mo.: Scott and Butler counties.

***Glyceria striata* (Lam.) Hitchc. Proc. Biol. Soc. Wash. 41: 157. 1928. Fowl Meadow Grass.**

*Glyceria nervata* (Willd.) Trin. (G).

*Panicularia nervata* (Willd.) Kuntze (B & B).

Sloughs, bogs, wet woods, and meadows. Circumneutral. General.

***Poa annua* L. Low Spear Grass, Annual Blue Grass.**

Fields, gardens, and waste ground. Indifferent. General and common.

***Poa chapmanniana* Scribn.**

Prairies, glades, and waste ground. Circumneutral. Central and southern Mo.: St. Louis, Jefferson, Dent, St. Francois, Shannon, Texas, Boone, Jackson, Polk, Greene, Christian, Douglas, Ozark, Stone, Jasper, and Newton counties.

***Poa compressa* L. Canada Blue Grass, English Blue Grass.**

Fields and rocky waste ground. Indifferent. General.

***Poa nemoralis* L.**

Introduced along railroads. Jackson Co.

***Poa pratensis* L. Kentucky Blue Grass.**

Fields, meadows, glades, open woods, and waste ground. Circumneutral to calciphile. General and common.

***Poa palustris* L. See Rh. 18: 235. 1916.**

*Poa triflora* Gilib. (G), (B & B).

Wet places and open ground. Circumneutral. Scattered: St. Louis, Ste. Genevieve, and Jackson counties.

***Poa sylvestris* Gray.**

Rich or alluvial woods. Circumneutral. General.

***Poa wolfii* Scribn.**

Rocky woods, moist ledges, and along streams. Calciphile to circumneutral. Central and southern Mo.: Franklin, Shannon, Texas, Boone, Jackson, Jasper, McDonald, Taney, and Stone counties.

***Eragrostis hypnoides* (Lam.) BSP. See Rh. 28: 114. 1926. Creeping Love Grass.**

Wet alluvial river banks and margins of sloughs and ponds. Circumneutral. General.

***Eragrostis reptans* (Michx.) Nees. See Rh. 28: 114-115. 1926.**

*Eragrostis Weigeltiana* (Reichenb.) Bush (B & B).

Moist alluvial ground along the Missouri River. Circumneutral. Western Mo., local: Jackson Co.

***Eragrostis capillaris* (L.) Nees. Love Grass.**

Fields, clearings, rocky ledges, glades, and waste ground. Indifferent. General and common.

***Eragrostis frankii* (Fisch., Mey. & Lall.) Steud.**

Waste alluvial and cultivated ground. Circumneutral. General.

- ERAGROSTIS CILIANENSIS** (All.) Link ex Lutati, Malpighia 18: 386. 1904; see Hitchcock, Man. Grasses U. S. Misc. Publ. U. S. Dept. Agr. 200: 154. 1935.  
*Eragrostis megastachya* (Koeler) Link (G).  
*Eragrostis major* Host (B & B).  
 Waste and cultivated ground. Indifferent. General.
- ERAGROSTIS POAEROIDES** (L.) Beauv. See Hitchcock, Man. Grasses U. S. Misc. Publ. U. S. Dept. Agr. 200: 156. 1935.  
*Eragrostis minor* Host (G), (B & B).  
 Waste ground. Indifferent. Introduced in Stone Co.
- ERAGROSTIS PILLOSA** (L.) Beauv. Indian Love Grass.  
 Moist banks, rocky open or alluvial or waste ground. Indifferent. General.
- ERAGROSTIS PECTINACEA** (Michx.) Nees. See Hitchcock, Man. Grasses U. S. Misc. Publ. U. S. Dept. Agr. 200: 151. 1935.  
*Eragrostis caroliniana* (Spreng.) Scribn.  
*Eragrostis Purshii* Schrad. (B & B).  
 Alluvial or open ground along streams and waste places. Indifferent. General.
- ERAGROSTIS DIFFUSA** Buckl. See Hitchcock, Man. Grasses U. S. Misc. Publ. U. S. Dept. Agr. 200: 151. 1935.  
 Open ground. Introduced in Jackson Co.
- ERAGROSTIS HIRSUTA** (Michx.) Nees.  
 Open ground. Circumneutral. Southwestern Mo.: Jasper Co.
- ERAGROSTIS INTERMEDIA** Hitchc. Jour. Wash. Acad. Sci. 23: 450. 1933.  
 Prairies and open ground. Circumneutral. Western Mo., scattered: Jackson and Newton counties. This has been confused with *Eragrostis lugens* which does not reach Missouri.
- ERAGROSTIS SPECTABILIS** (Pursh) Steud. See Hitchcock, Man. Grasses U. S. Misc. Publ. U. S. Dept. Agr. 200: 163-164. 1935. Purple Love Grass.  
*Eragrostis pectinacea* of Am. auth., not Michx. (G), (B & B).  
*Eragrostis pectinacea* var. *spectabilis* Gray (G).  
 Sandy or rocky open or waste ground. Oxylophile to circumneutral. General and common.
- ERAGROSTIS TRICHODES** (Nutt.) Nash.  
 Moist open, sandy or rocky ground. Oxylophile. Central and southern Mo.: Sta. Genevieve, Dent, Ozark, Carroll, and Jackson counties.
- DIARINA FESTUCOIDES** Raf.  
*Diarrhena diandra* (Michx.) Wood (G), (B & B).  
*Diarrhena americana* Beauv.  
 Low, rich or alluvial woods and river banks. Circumneutral. General but scattered: St. Louis, Jefferson, Franklin, Shannon, Boone, Camden, Gentry, Clinton, Clay, Jackson, Hickory, Jasper, McDonald, Stone, and Taney counties.
- DISTICHIS STRICTA** (Torr.) Rydb. Salt Grass, Alkali Grass.  
 Along railroads and waste ground. Indifferent. Western Mo.: introduced in Buchanan and Jackson counties.

***Uniola latifolia* Michx.** Spike Grass.

Rocky woods, bluffs, moist thickets and alluvial or rich low woods. Circumneutral to calciphile. General.

***DACTYLIS GLOMERATA* L.** Orchard Grass.

Fields, waste ground, and roadsides. Indifferent, General.

***ARUNDO DONAX* L.** Giant Reed.

Open ground. Escaped from cultivation in Dunklin Co.

***Phragmites communis* Trin. var. *Berlandieri* (Fournier) Fernald, Rh. 34: 211. 1932.** Reed.

*Phragmites communis* of Am. auth. in part (G), (B & B).

Low ground along streams and ponds. Circumneutral. Northern and west-central Mo.: Macon, Nodaway, Platte, Clay, Jackson, Lafayette, Saline, and Bates counties.

***Melica Porteri* Scribn.**

Rocky wooded bluffs. Calciphile. Western Mo., local: Jackson Co.

***Melica mutica* Walt.** Melic Grass.

Rocky woods and bluffs. Calciphile. General: St. Louis, Jefferson, Madison, Iron, Wayne, Carter, Shannon, Texas, Miller, Hickory, Callaway, Mercer, Dekalb, Jackson, and Jasper counties.

***Melica nitens* Nutt.** Melic Grass.

Rocky woods, glades, and bluffs. Calciphile. General but scattered: St. Louis, Jefferson, Wayne, Oregon, Boone, Camden, Gentry, Clinton, Clay, Jackson, Hickory, Jasper, McDonald, Stone, and Taney counties.

***Triodia flava* (L.) Smyth.** See Hitchcock, Man. Grasses U. S. Misc. Publ. U. S. Dept. Agr. 200: 213, 969. 1935. Tall Red Top, Purple Top.

*Tridens flavus* (L.) Hitchc. (G), (B & B).

*Tricuspis flava* (L.) Hubbard.

Open woods, meadows, glades, and waste ground. Circumneutral. General.

***Triodia stricta* (Nutt.) Benth.** See Hitchcock, Man. Grasses U. S. Misc. Publ. U. S. Dept. Agr. 200: 215 and 971. 1935.

*Tridens strictus* (Nutt.) Nash (G), (B & B).

*Tricuspis stricta* (Nutt.) Gray.

Prairies and moist open ground. Circumneutral to oxylophile. Southern Mo.: Mississippi, Dunklin, Butler, Dade, Barton, Jasper, and Newton counties.

***Triodia elongata* (Buckl.) Scribn.** See Hitchcock, Man. Grasses U. S. Misc. Publ. U. S. Dept. Agr. 200: 217, 968. 1935.

*Tridens elongatus* (Buckl.) Nash (B & B).

*Tricuspis elongata* (Buckl.) Heller.

Rocky bluffs and glades. Calciphile. Southwestern Mo.: Henry, Barry, and McDonald counties.

***Triplasis purpurea* (Walt.) Chapm.** Sand Grass.

Sandy open ground. Oxylophile. Central and southeastern Mo.: St. Louis, Jefferson, Dunklin, and Jackson counties.

***AGROPYRON REPENS* (L.) Beauv. var. *SUBULATUM* (Scribn.) Reichenb.** See Rh. 35: 183-184. 1933. Quitch Grass, Couch Grass, Quack Grass.

Introduced in fields and waste ground. Indifferent. General.



**Agropyron Smithii** Rydb. Blue-joint.

Prairies, fields, and waste ground. Indifferent. General but scattered.

**Agropyron trachycaulum** (Link) Steud. var. **typicum** Fernald, Rh. 35: 169. 1933.

Awed Wheat Grass.

*Agropyron tenerum* Vasey (G), (B & B).

*Agropyron caninum* var. *tenerum* (Vasey) Pease & Moore.

Introduced in fields and waste ground. Indifferent. Scattered in western Mo.: Jackson and Jasper counties. This has been confused with *Agropyron pseudorepens* which does not occur in Mo.

**ANGLOPS CYLINDRICA** Host.

*Triticum Aegilops* Beauv.

*Triticum cylindricum* Ces., Pass. & Gib.

Introduced along railroad. Jackson Co.

**Elymus glaucus** Buckley. Blue Wild Rye.

*Elymus Mackenzii* Bush.

Rocky wooded bluffs. Calciphile. Southwestern Mo.: Jasper, Barry, and Ozark counties. This has been confused with *Elymus Macounii* which does not reach Mo.

**Elymus villosus** Muhl. See Rh. 35: 195. 1933.

*Elymus striatus* of Am. auth., not Willd. (G), (B & B).

Open or rocky woods and prairies. Circumneutral to calciphile. General.

**Elymus villosus** f. **arkansanus** (Scribn. & Ball) Fernald, Rh. 35: 195. 1933.

*Elymus striatus* var. *arkansanus* (Scribn. & Ball) Hitchc. (G).

*Elymus arkansanus* Scribn. & Ball (B & B).

Rocky woods. Circumneutral to calciphile. Southern Mo.: Oregon, Greene, Barry, and Jasper counties.

**Elymus canadensis** L. See Rh. 35: 191. 1933. Nodding Wild Rye.

*Elymus robustus* var. *vestitus* Wiegand.

Rocky woods and prairies, and waste ground. Circumneutral. General.

**Elymus canadensis** f. **glaucifolius** (Muhl.) Fernald, Rh. 35: 191. 1933.

*Elymus glaucifolius* Muhl.

*Elymus glaucifolius* var. *robustus* (Scribn. & Sm.) Bush.

*Elymus glaucifolius* var. *crescendus* (Ramaley) Bush.

*Elymus robustus* Scribn. & Sm. (G).

Rocky open woods, alluvial ground, prairies, and waste places. Circumneutral. General.

**Elymus virginicus** L. See Rh. 35: 198. 1933. Wild Rye.

*Elymus striatus* Willd., but not of most recent authors.

Alluvial ground, open woods, and prairies. Circumneutral. General.

**Elymus virginicus** f. **hirsutiglumis** (Scribn.) Fernald, Rh. 35: 198. 1933.

*Elymus virginicus* var. *hirsutiglumis* (Scribn.) Hitchc. (G).

*Elymus hirsutiglumis* Scribn. (B & B).

Open woods and prairies. Circumneutral. General but scattered.

**Elymus virginicus** var. **jejunus** (Ramaley) Bush, Am. Midl. Nat. 10: 65. 1926.

*Elymus jejunus* (Ramaley) Rydb. (B & B).

Fields, open woods, and waste ground. Circumneutral. General.

**Elymus virginicus** var. *submuticus* Hook.

Open woods. Circumneutral. Scattered: Jefferson, Oregon, and Jackson counties.

**Elymus virginicus** var. *glabriflorus* (Vasey) Bush, Am. Midl. Nat. 10: 62. 1926.

*Elymus glabriflorus* (Vasey) Scribn. & Ball (B & B).

*Elymus australis* var. *glabriflorus* (Vasey) Wiegand.

Open, rocky, rich or alluvial woods, and prairies. Circumneutral. General.

**Elymus virginicus** var. *glabriflorus* f. *australis* (Scribn. & Ball) Fernald. See Rh. 35: 198. 1935.

*Elymus australis* Scribn. & Ball (G), (B & B).

Rocky open woods and prairies. Circumneutral. Central and southern Mo.

**Sitanion hystrix** (Nutt.) J. G. Smith.

*Sitanion longifolium* J. G. Smith. (G).

*Sitanion elymoides* Raf. (B & B).

Introduced along railroads. Jackson Co.

**Hystrix patula** Moench. See Am. Jour. Bot. 21: 133-134. 1934. Bottle-brush.

*Hystrix Hystrix* (L.) Millsp. (B & B).

Open or rocky woods and dry open or waste ground. Circumneutral to oxylophile. General.

**Hordeum jubatum** L. Squirrel-tail Grass.

Fields, roadsides, and waste ground. Indifferent. General, except in the Ozark region, but commonest in northern Mo., where native, and probably introduced elsewhere.

**Hordeum pusillum** Nutt.

Cultivated and waste ground. Indifferent. General.

**Hordeum nodosum** L. Meadow Barley.

Dry open ground. Indifferent. Eastern Mo., scattered: St. Louis, Jefferson, Franklin, and Phelps counties.

**HORDEUM VULGARE** L. var. *TRIPURCATUM* (Schlecht.) Alefeld. Beardless Barley.

Waste ground. Indifferent. Introduced in Jackson Co.

**LOLIUM PERENNE** L. Perennial Rye Grass.

Introduced in fields, meadows, and waste ground. Indifferent. General.

**LOLIUM MULTIFLORUM** Lam. Italian Rye Grass.

Introduced in similar situations to the preceding, but less common. Indifferent. Scattered: Boone, Saline, and Jackson counties.

**LOLIUM TEMULENTUM** L. Darnel.

Introduced in fields and waste ground. Indifferent. Jackson Co.

**Koeleria cristata** (L.) Pers. Crested Hair Grass.

Prairies and fields. Circumneutral. General.

**Sphenopholis obtusata** (Michx.) Scribn. Early Bunch Grass.

Open rocky ground and bluffs. Circumneutral to calciphile. General.

**Sphenopholis obtusata** var. *pubescens* (Scribn. & Merr.) Scribn.

Rocky open ground. Scattered. Southern and east-central Mo.: St. Louis, Jefferson, Shannon, Scott, and Taney counties.

*Sphenopholis obtusata* var. *lobata* (Trin.) Scribn.

Occasionally found with the typical form.

*Sphenopholis intermedia* Rydb. See *Bartonia* 14: 34. 1932; also *Am. Jour. Bot.* 21: 134. 1934.

*Sphenopholis pallens* of auth., not *Aira pallens* Spreng.

Moist rocky open ground. Circumneutral. General.

*Sphenopholis nitida* (Spreng.) Scribn.

Rocky woods. Circumneutral. Southern Mo., scattered: Ste. Genevieve, Ripley, Reynolds, Carter, Douglas, and Wright counties.

*Trisetum flavescens* (L.) Beauv. Yellow False Oats.

Introduced along railroads. Jackson Co.

*AVENA SATIVA* L. Oats.

Commonly escaped in waste ground and along railroads and roadsides. Indifferent. General.

*AVENA FATUA* L. Wild Oats.

Occasionally introduced in waste ground. Scattered.

*ARRHENATHERUM ELATIUS* (L.) Beauv. Oat Grass.

Fields and waste ground. Introduced. Local: Jasper Co.

*HOLCUS LANATUS* L. Velvet Grass.

*Notholcus lanatus* (L.) Nash (B & B).

Introduced along railroads. Jackson Co.

*Danthonia spicata* (L.) Beauv. Wild Oat Grass.

Rocky prairies, open woods, and glades. Oxylophile. General, but commonest in central and southern Mo.

*Calamagrostis canadensis* (Michx.) Nutt. var. *typica* Stebbins, Rh. 32: 40. 1930.

Blue-joint Grass.

Wet meadows and prairie swales. Circumneutral. Northern and central Mo.:

Mercer, Schuyler, Linn, Ralls, St. Louis, Dekalb, and Jackson counties.

*Calamagrostis canadensis* var. *Macouniana* (Vasey) Stebbins, Rh. 32: 41. 1930.

*Calamagrostis Macouniana* Vasey (B & B).

Wet meadows. Circumneutral. Northern and central Mo.: Clark, Lewis,

Ralls, Schuyler, Adair, Grundy, Harrison, and Jackson counties.

*Calamagrostis inexpansa* Gray var. *brevior* (Vasey) Stebbins, Rh. 32: 50. 1930.

*Calamagrostis inexpansa* Gray, in part (G), (B & B).

Low wet woods. Circumneutral. Rare and local. Southern and central Mo.: Jackson and Texas counties.

*Calamovilfa longifolia* (Hook.) Hack. Long-leaved Reed Grass.

Low sandy open ground. Oxylophile to circumneutral. Central Mo.: St. Louis, Jefferson, Clay, and Jackson counties.

*AGROSTIS SPICA-VENTI* L.

*Apera spica-venti* (L.) Beauv. (G), (B & B).

Waste ground. Introduced in Jackson Co.

*AGROSTIS INTERRUPTA* L.

Waste ground. Introduced in St. Louis Co.

**AGROSTIS STOLONIFERA** L. See Rh. 35: 317. 1933.

*Agrostis alba* of auth., not L. (G), (B & B).

Fields and waste ground. Indifferent. General and common.

**AGROSTIS TENUIS** Sibth.

*Agrostis alba* var. *vulgaris* (With.) Thurb. (G).

In similar situations to the preceding. Indifferent. General and common.

**Agrostis Elliottiana** Schultes.

Open sandy or cherty ground, sterile fields, prairies, and glades. Oxyphile. East-central and southern Mo.: Lincoln, Montgomery, St. Louis, Jefferson, St. Francois, Iron, Ste. Genevieve, Madison, Bollinger, Dunklin, Butler, Wayne, Shannon, Dent, Crawford, Washington, Phelps, Maries, Pulaski, Gasconade, Franklin, Texas, Miller, Laclede, Christian, Webster, Barry, Jasper, and McDonald counties.

**Agrostis scabra** Willd. See Rh. 35: 207. 1933. Hair Grass, Tickle Grass.

*Agrostis hyemalis* of auth., not Walt. (G), (B & B).

Fields, meadows, and open woods. Oxyphile to circumneutral. General.

**Agrostis perennans** (Walt.) Tuckerm. Thin Grass.

Fields, prairie swales, margins of streams and ponds, low or rich woods, and moist open ground. Circumneutral. General.

**Agrostis perennans** var. *aestivalis* Vasey. See Rh. 35: 318. 1933.

*Agrostis Schweinitzii* Trin. (B & B).

Wooded banks, slopes, rich shaded woods, and along streams. Circumneutral. General.

**Cinna arundinacea** L. Wood Reed Grass.

Wet woods and meadows. Circumneutral. General.

**ALOPECURUS PRATENSIS** L. Meadow Fox-tail Grass.

Fields, meadows, and waste ground. Indifferent. Scattered: St. Louis and Boone counties.

**Alopecurus carolinianus** Walt. See Am. Jour. Bot. 21: 136. 1934.

*Alopecurus geniculatus* of auth., not L. (G), (B & B).

*Alopecurus geniculatus* L. var. *ramosus* (Poir.) St. John, Rh. 19: 167. 1917.

Meadows, waste ground, borders of ponds, sloughs, wet ground, and wet depressions in rocky glades. Circumneutral to calciphile. General. Typical *A. geniculatus* does not reach Mo. This species is much commoner than the next following.

**Alopecurus aequalis** Sobol. See Rh. 27: 196. 1925. Floating Fox-tail Grass.

*Alopecurus geniculatus* var. *aristulatus* (Michx.) Torr. (G).

*Alopecurus aristulatus* Michx. (B & B).

Swampy ground, borders of ponds and sloughs, and wet open ground. Circumneutral. General.

**PHLEUM PRATENSE** L. Timothy.

Meadows, roadsides, and waste ground. Circumneutral. General.

**Muhlenbergia cuspidata** (Torr.) Rydb. See Rh. 18: 233. 1916.

*Sporobolus brevifolius* (Nutt.) Scribn., in part (G).

Dry banks, rocky bluffs, and loess hills. Circumneutral to calciphile. Western

- and southern Mo.: Crawford, Phelps, Pulaaki, Miller, Camden, Atchison, Holt, Buchanan, Jackson, Henry, and McDonald counties.
- Muhlenbergia asperifolia* (Nees & Meyen) Parodi. See Hitchcock, Man. Grasses U. S. Misc. Publ. U. S. Dept. Agr. 200: 366. 1935. Scratch Grass.  
*Sporobolus asperifolius* (Nees & Meyen) Thurber (B & B).  
 Moist sandy ground. Oxylophile. Western Mo.: Holt and Jackson counties.
- Muhlenbergia sobolifera* (Muhl.) Trin.  
 Rocky woods, shaded slopes, limestone bluffs, and prairies. Calciphile to circumneutral. General.
- Muhlenbergia tenuiflora* (Willd.) BSP.  
 Open rocky woods, glades, dry open soils, and prairies. Oxylophile to circumneutral. General.
- Muhlenbergia racemosa* (Michx.) BSP.  
 Moist prairies, alluvial banks, meadows, and open woods. Circumneutral. General.
- Muhlenbergia mexicana* (L.) Trin. Satin Grass.  
 Rocky banks and moist woods. Circumneutral. General.
- Muhlenbergia mexicana* f. *commutata* (Scribn.) Wiegand, Rh. 26: 1. 1924.  
 In similar situations to the typical form. Local: Lincoln Co.
- Muhlenbergia glabriflora* Scribn.  
 Moist open ground. Circumneutral. Local: St. Louis Co.
- Muhlenbergia sylvatica* Torr. See Rh. 32: 118. 1930.  
*Muhlenbergia umbrosa* Scribn.  
 Moist rocky woods and slopes along streams. Circumneutral. General.
- Muhlenbergia sylvatica* f. *attenuata* (Scribn.) Palmer & Steyermark, comb. nov.  
*Muhlenbergia umbrosa* f. *attenuata* (Scribn.) Deam, Publ. Indiana Dept. Conserv. 82: 171. 1929.  
 Occasionally found in similar situations to the preceding. Scattered: Gentry, St. Louis, and Greene counties.
- Muhlenbergia foliosa* Trin.  
 Thickets and open woods, and moist ground. Circumneutral. Western Mo.: Jackson and Jasper counties.
- Muhlenbergia Schreberi* J. F. Gmel. Drop-seed Grass, Nimble Will.  
 Moist open and waste ground; often about dwellings. Circumneutral. General.
- Muhlenbergia curtisetosa* (Scribn.) Bush.  
*Muhlenbergia Schreberi* var. *curtisetosa* Scribn.  
 Rocky ground. Circumneutral. Southwestern Mo.: Barry Co.
- Muhlenbergia brachyphylla* Bush, Am. Midl. Nat. 6: 41. 1919.  
 Prairie banks and low moist woods. Circumneutral. Southwestern Mo.: Barton and Jasper counties.
- Muhlenbergia capillaris* (Lam.) Trin. Hair Grass.  
 Dry open ground and cherty woods. Oxylophile. Southern Mo.: Shannon, Ozark, Taney, Henry, Barry, Greene, Jasper, Newton, and McDonald counties.

- Muhlenbergia expansa** (DC.) Trin. See Hitchcock, Man. Grasses U. S. Misc. Publ. U. S. Dept. Agr. 200: 386. 1935.  
*Muhlenbergia trichopodes* (Ell.) Chapm.  
Dry rocky ground. Circumneutral. Southwestern Mo., local: McDonald Co.
- Sporobolus POIRETII** Roem. & Schult. See Barton 14: 32. 1932, and Am. Jour. Bot. 21: 136. 1934. Smut Grass.  
*Sporobolus Berteroanus* (Trin.) Hitchc. & Chase.  
*Sporobolus indicus* of auth., not R. Br. (G).  
Introduced in cotton fields. Circumneutral. Southeastern Mo.: Dunklin Co.
- Sporobolus vaginiflorus** (Torr.) Wood.  
Prairies, fields, and waste places, sterile soils. Oxylophile. General.
- Sporobolus neglectus** Nash.  
Rocky open woods, glades, fields, and waste places. Oxylophile to circumneutral. General but scattered: St. Louis, Jefferson, Shannon, Montgomery, Boone, Macon, Jackson, Henry, Jasper, Barry, Stone, and Ozark counties.
- Sporobolus ozarkanus** Fernald, Rh. 25: 109. 1933.  
Chert glades. Oxylophile. Southwestern Mo., local: Jasper Co.
- Sporobolus asper** (Michx.) Kunth. Bush Grass.  
Dry prairies, rocky open woods and glades, and waste ground. Oxylophile to circumneutral. General but scattered: St. Louis, Franklin, Macon, Sullivan, Boone, Cooper, Henry, Caldwell, Jackson, Jasper, and Newton counties.
- Sporobolus asper** var. *pilosus* (Vasey) Hitchc. Proc. Biol. Soc. Wash. 41: 161. 1928.  
*Sporobolus pilosus* Vasey (B & B).  
Rocky open ground. Oxylophile. Southern Mo.: Jefferson, Washington, Iron, Jasper, and Barry counties.
- Sporobolus asper** var. *Hookeri* (Trin.) Vasey. See Hitchcock, Man. Grasses U. S. Misc. Publ. U. S. Dept. Agr. 200: 398, 958. 1935.  
*Sporobolus Drummondii* (Trin.) Vasey (B & B).  
*Sporobolus attenuatus* Nash (B & B).  
Rocky open woods, glades, and prairies. Oxylophile to circumneutral. Central, western, and southern Mo.: St. Louis, Phelps, Jackson, Caldwell, and Jasper counties.
- Sporobolus clandestinus** (Spreng.) Hitchc.  
*Sporobolus canovirens* Nash (G), (B & B).  
Rocky open woods, glades, open ground, and prairies. Oxylophile. East-central and southern Mo.: Lincoln, Boone, Montgomery, Warren, St. Louis, Jefferson, Ste. Genevieve, St. Francois, Washington, Crawford, Iron, Scott, Dunklin, Phelps, Dent, Shannon, Ozark, Taney, Barry, Jasper, Newton, and McDonald counties.
- Sporobolus heterolepis** Gray. Dropseed Grass.  
Prairies, glades, and rocky cliffs. Calciphile to circumneutral. General, though apparently absent from much of the southwestern part: Clark, Lewis, Marion, Ralls, Pike, St. Louis, Jefferson, Washington, St. Francois, Madison, Iron, Reynolds, Carter, Shannon, Texas, Dent, Phelps, Maries, Pulaski, Callaway, Shelby, Schuyler, Randolph, Macon, Linn, Sullivan, Worth, Daviess, Dekalb, Clinton, Caldwell, Jackson, Johnson, Henry, and Taney counties.



*Sporobolus argutus* (Nees) Kunth.

Dry open ground. Introduced in Jackson Co.

*Sporobolus cryptandrus* (Torr.) Gray. Sand Dropseed.

Dry or moist open ground, usually in sandy soil, and loess mounds, also introduced along railroads. Oxylophile. Central and western Mo., mostly along the larger rivers: St. Louis, Jefferson, Montgomery, Boone, Moniteau, Atchison, Holt, Andrew, Buchanan, Clay, and Jackson counties.

*Sporobolus airoides* Torr. Alkali Sacaton.

Loess hills. Calciphile. Northwestern Mo.: Atchison Co., and also introduced in Jackson Co.

*HELEOCHLOA SCHOENOIDES* (L.) Host.

Introduced in meadows. Local: St. Louis Co.

*Brachyelytrum erectum* (Schreb.) Beauv.

Rocky woods and bluffs. Circumneutral to calciphile. General, but commonest in southern Mo.

*Oryzopsis racemosa* (Sm.) Ricker. Black-seeded Mountain Rice.

Woods. Circumneutral. Eastern Mo., local: Clark and Shannon counties.

*Stipa spartea* Trin. Porcupine Grass.

Dry rocky prairies. Oxylophile. Northern and western Mo., uncommon: Macon, Adair, Schuyler, Mercer, Davies, Dekalb, Nodaway, Jackson, Barton, and Jasper counties. Also reported from Greene Co.

*Aristida basiramea* Engelm. Triple-awned Grass.

Dry open ground. Oxylophile. Central Mo., local: Montgomery and Jackson counties.

*Aristida dichotoma* Michx. Poverty Grass.

Dry prairies, glades, open upland woods, and waste ground. Oxylophile. General and common.

*Aristida Curtissii* (Gray) Nash. See Contr. U. S. Nat. Herb. 22: 535-536. 1924.

*Aristida dichotoma* var. *Curtissii* Gray (G).

In similar situations to the preceding. Oxylophile. Central and southern Mo.: St. Louis, Jefferson, Madison, Crawford, Montgomery, Polk, Barry, and Newton counties.

*Aristida oligantha* Michx. Triple-awned Grass.

Dry open ground, glades, sterile fields, and waste ground. Oxylophile. General.

*Aristida ramosissima* Engelm. Branching Poverty Grass.

Dry prairies, glades, and sterile soils. Oxylophile. Central and southern Mo.: St. Louis, St. Francois, Dunklin, Butler, and Greene counties.

*Aristida longespica* Poir. See Contr. U. S. Nat. Herb. 22: 538-539. 1924.

*Aristida gracilis* Ell. (G), (B & B).

Rocky prairies, glades, sterile fields, and waste ground. Oxylophile. Eastern, central, and southern Mo.: Marion, St. Louis, Jefferson, St. Francois, Ste. Genevieve, Dunklin, Dent, Boone, Cooper, Jackson, Greene, Barry, Jasper, and McDonald counties.

***Aristida adscensionis* L.** See Contr. U. S. Nat. Herb. 22: 541-545. 1924.

*Aristida fasciculata* Torr. (B & B).

*Aristida bromoides* HBK.

Upland prairies and sterile open ground. Oxylophile. Central and southern Mo.: Maries, Madison, Jackson, and Jasper counties.

***Aristida intermedia* Scribn. & Ball.**

Dry rocky woods, glades, and sterile prairies. Oxylophile. Central and southern Mo.: St. Louis, Washington, Iron, Jackson, and Jasper counties.

***Aristida lanosa* Muhl.**

Sandy open ground. Oxylophile. Southeastern Mo., local: Stoddard Co.

***Aristida purpurascens* Poir.**

Rocky open woods, glades, and open ground. Oxylophile. Central and southern Mo.: Lincoln, St. Louis, Jefferson, Ste. Genevieve, Madison, Scott, Stoddard, Dunklin, Crawford, Dent, Shannon, Montgomery, Polk, Henry, Ozark, Taney, Barry, Jasper, Newton, and McDonald counties.

***Leptochloa filiformis* (Lam.) Beauv.** Red Sprangle Top.

*Leptochloa attenuata* (Nutt.) Steud. (B & B).

*Leptochloa mucronata* Kunth.

Fields, low cultivated ground, and alluvial ground along the larger rivers. Circumneutral. Central and southern Mo.: St. Charles, St. Louis, Jefferson, Perry, Mississippi, Dunklin, Butler, Ripley, Crawford, Carroll, Jackson, Greene, Ozark, Taney, Vernon, Barton, Jasper, and Newton counties.

***Diplachne acuminata* Nash.**

Wet open ground along the Missouri River, and wet soil about saline springs. Calciphile to circumneutral. Western Mo.: Atchison, Holt, Jackson, Carroll, Saline, Randolph, Howard, Cooper, and Jackson counties.

***Diplachne fascicularis* (Lam.) Beauv.**

*Leptochloa fascicularis* (Lam.) Gray (G).

Wet open ground along the larger streams, saline springs, and depressions in rocky glades. Calciphile to circumneutral. Central and southern Mo.: St. Louis, Jefferson, New Madrid, Ripley, Randolph, Saline, Carroll, Clinton, Holt, Buchanan, Clay, Jackson, Greene, Jasper, and Newton counties.

**ELEUSINE INDICA (L.) Gaertn.** Goose Grass, Yard Grass.

Waste and cultivated ground. Indifferent. General and common.

**CYNODON DACTYLON (L.) Pers.** Bermuda Grass.

Open, waste, sandy, and cultivated ground. Oxylophile to circumneutral. Central and southern Mo.: St. Charles, St. Louis, Jefferson, Mississippi, Dunklin, Butler, Boone, Jackson, Vernon, and Jasper counties.

***Schedonnardus paniculatus* (Nutt.) Trel.** Tumble Grass.

Dry open woods, prairies, glades, and waste ground. Oxylophile to circumneutral. Middle and western Mo.: Boone, Andrew, Wright, Greene, Jackson, Jasper, and Newton counties.

***Beckmannia Syzigachne* (Steud.) Fernald, Rh. 30: 27. 1928.** American Slough Grass.

*Beckmannia erucaeformis* of Am. auth. in part, not Host (G), (B & B).

Wet open ground. Introduced in Jackson Co.

*Spartina pectinata* Link. See Rh. 35: 258-260. 1933. Slough Grass.

*Spartina Michauxiana* Hitchc. in part (G).

Wet meadows, sloughs, and margins of ponds. Circumneutral to calciphile. General.

*Spartina pectinata* var. *Suttiei* (Farwell) Fernald, Rh. 35: 260. 1933.

Commonly found with the typical form but more frequent.

*Gymnopogon ambiguus* (Michx.) BSP.

Rocky open woods, sandy open places, and glades. Oxylophile. Southern and east-central Mo.: St. Charles, Jefferson, Scott, Stoddard, Shannon, Dent, Crawford, Jasper, Newton, and McDonald counties.

*Chloris verticillata* Nutt. Windmill Grass.

Upland prairies and waste ground; introduced from farther west. Middle and western Mo.: Boone, Jackson, and Jasper counties.

*Chloris virgata* Sw.

*Chloris elegans* HBK. (G), (B & B).

Introduced in Jackson Co.

*Bouteloua curtipendula* (Michx.) Torr.

Rocky open woods and glades. Circumneutral to calciphile. General.

*Bouteloua gracilis* (HBK.) Lag. See Contr. U. S. Nat. Herb. 14\*: 375. 1912.

Mesquite Grass, Blue Grama.

*Bouteloua oligostachya* (Nutt.) Torr. (G), (B & B).

Upland prairies and loess hills. Circumneutral to calciphile. Western Mo.: Atchison, Holt, and Jackson counties.

*Bouteloua hirsuta* Lag. Hairy Mesquite Grass, Hairy Grama.

Loess hills. Calciphile. Northwestern Mo.: Atchison and Holt counties.

*Euchloa dactyloides* (Nutt.) Engelm. Buffalo Grass.

Loess hills. Calciphile. Northwestern Mo.: Atchison and Holt counties, and also introduced in Jackson Co.

*ANTHOXANTHUM ODORATUM* L. Sweet Vernal Grass.

Introduced along railroad: Jackson Co., and also reported from St. Louis Co.

*PHALARIS CANARIENSIS* L. Canary Grass.

Waste ground, and along railroads and roadsides. Indifferent. Scattered: St. Louis, Madison, Jackson, and Jasper counties.

*Phalaris arundinacea* L. Reed Canary Grass.

Wet meadows and ditches along roadsides. Circumneutral. Northern and western Mo., uncommon: Macon, Holt, Andrew, Clay, and Jackson counties.

*Phalaris caroliniana* Walt. Canary Grass.

Moist open ground. Circumneutral. Central and southern Mo., scattered and uncommon: Scott, Dunklin, Butler, Jackson, Johnson, Greene, and Jasper counties.

*Leersia lenticularis* Michx. Catch-fly Grass.

Wooded swamps and borders of bayous and streams. Circumneutral. General, but commonest in southern Mo.: Lincoln, St. Louis, Jefferson, Mississippi, New Madrid, Dunklin, Butler, Clinton, and Jasper counties.

*Leersia oryzoides* (L.) Sw. Rice Cut Grass.

Swamps and wet meadows. Circumneutral. General.

**Leersia virginica** Willd. Cut Grass, White Grass.

Swamps, wet woods, and low meadows. Circumneutral. General.

**Zizania aquatica** L. var. *interior* Fassett, Rh. 26: 158. 1924. Water Rice, Indian Rice.

Swamps and borders of ponds and streams. Circumneutral. Scattered and uncommon: St. Charles, New Madrid, Dunklin, Butler, Clay, Jackson, Greene, and Newton counties.

**Zizaniopsis miliacea** (Michx.) Döll. & Asch.

Swampy ground and borders of ditches. Circumneutral. Southeastern Mo.: Pemisecot and Dunklin counties.

**DIGITARIA SANGUINALIS** (L.) Scop. Crab Grass, Finger Grass.

Waste and cultivated ground. Often a troublesome weed. Indifferent. General.

**DIGITARIA SANGUINALIS** var. *MARGINATA* (Link) Fernald, Rh. 22: 103. 1920.

*Syntherisma marginata* (Link) Nash (B & B).

Occasionally found with the typical form. Scattered: Dunklin Co.

**DIGITARIA ISCHAEUM** Schreb. See Rh. 18: 231. 1916. Small Crab Grass.

*Digitaria humifusa* Pers. (G).

*Syntherisma linearis* (Krock.) Nash (B & B).

Waste and cultivated ground. Indifferent. General.

**Digitaria filiformis** (L.) Koeler. Slender Finger Grass.

Prairies, glades, and sandy fields. Oxylophile to circumneutral. Central and southern Mo.: Boone, Gasconade, Dent, Maries, Madison, Jackson, Jasper, Newton, McDonald, and Stone counties.

**Digitaria filiformis** var. *villosa* (Walt.) Fernald, Rh. 36: 19-20. 1934.

*Digitaria villosa* (Walt.) Ell. (G).

Prairies and glades. Oxylophile. Southern and east-central Mo.: St. Louis, St. Francois, Iron, Dunklin, Jasper, and McDonald counties.

**Leptoloma cognatum** (Schultes) Chase. Fall Witch Grass.

Prairies, glades, and waste ground. Oxylophile. General.

**Eriochloa contracta** Hitchc. Dotted Millet, Prairie Cup Grass.

*Eriochloa punctata* of auth., not Hamilton (G), (B & B).

Introduced in cultivated and waste ground. Uncommon. Circumneutral. Boone and Jackson counties.

**Paspalum repens** Bergius. See Contr. U. S. Nat. Herb. 28: 31-32. 1929.

*Paspalum mucronatum* Muhl. (G), (B & B).

Wet alluvial ground along streams and margins of ponds and lakes. Circumneutral. Eastern, central, and southern Mo.: Marion, St. Louis, Jefferson, New Madrid, Dunklin, Butler, Howell, Chariton, Jackson, Johnson, Vernon, Jasper, and Barry counties.

**Paspalum dissectum** L.

Muddy banks of streams and ditches. Circumneutral to oxylophile. Southern Mo., scattered: Dunklin and Jasper counties.

**Paspalum ciliatifolium** Michx.

Prairies and borders of woods. Oxylophile to circumneutral. Southwestern Mo.: Jasper Co.

*Paspalum ciliatifolium* var. *stramineum* (Nash) Fernald, Rh. 36: 20. 1934.

*Paspalum stramineum* Nash (G), (B & B).

*Paspalum Bushii* Nash (G).

Prairies and open woods. Oxylophile. General: Putnam, Jefferson, Dent, Pemiscot, Dunklin, Clay, Jackson, and Polk counties.

*Paspalum ciliatifolium* var. *Muhlenbergii* (Nash) Fernald, Rh. 36: 20. 1934.

*Paspalum Muhlenbergii* Nash (G), (B & B).

*Paspalum pubescens* Muhl. (G), (B & B).

Prairies, rocky banks, and open woods. Oxylophile to circumneutral. General: Putnam, Warren, St. Louis, Jefferson, Franklin, Ste. Genevieve, St. Francois, Mississippi, Pemiscot, Dunklin, Oregon, Pulaski, Boone, Saline, Jackson, Barton, Jasper, and Greene counties.

*Paspalum floridanum* Michx.

Moist meadows and prairie swales. Oxylophile to circumneutral. Southern Mo.: Mississippi, Barton, and Jasper counties.

*Paspalum pubiflorum* Rupr. var. *glabrum* Vasey. See Rh. 36: 22. 1934.

*Paspalum laeviglume* Scribn. (G), (B & B).

Moist open ground, meadows, and prairie swales; sometimes a weed in waste ground. Circumneutral. Southern Mo.: Jefferson, Ste. Genevieve, Dunklin, Butler, Taney, Jasper, and McDonald counties.

*Paspalum laeve* Michx. var. *circularae* (Nash) Stone. See Rh. 36: 22. 1934.

*Paspalum circularae* Nash (G), (B & B).

Prairies, fields, and moist open ground. Circumneutral to oxylophile. Central and southern Mo.: Lincoln, St. Louis, Jefferson, Scott, Mississippi, New Madrid, Dunklin, Butler, Randolph, Boone, Callaway, Dent, Shannon, Oregon, Texas, Howell, Wright, Greene, Jackson, Barton, Jasper, and McDonald counties.

*Paspalum laeve* var. *pilosum* Scribn. See Rh. 36: 22. 1934.

*Paspalum plenipilum* Nash (G), (B & B).

*Paspalum praelongum* Nash.

Low ground, and borders of lakes and bayous. Circumneutral. Southern Mo., scattered: New Madrid and Wright counties.

*Panicum depauperatum* Muhl. See Rh. 23: 194. 1921.

Prairies, glades, open sterile woods, and waste ground. Oxylophile. General, but commonest in central and southern Mo.: Schuyler, Lincoln, St. Louis, Jefferson, St. Francois, Ste. Genevieve, Bollinger, Wayne, Shannon, Ripley, Greene, Wright, Webster, Ozark, Stone, Jasper, Newton, and McDonald counties.

*Panicum perlongum* Nash.

Rocky prairies, glades, and open woods, chiefly in chert, gravel, or sand. Oxylophile. General.

*Panicum linearifolium* Scribn.

Prairies, glades, and rocky open woods. Oxylophile. General.

*Panicum linearifolium* var. *Wernerii* (Scribn.) Fernald, Rh. 23: 194. 1921.

*Panicum Wernerii* Scribn. (G), (B & B).

Rocky prairies, glades, and open woods. Oxylophile. Southern Mo.: Ste. Genevieve, St. Francois, Iron, Ozark, Douglas, Webster, Christian, Taney, and Jasper counties.

***Panicum xalapense* HBK.**

Low woods and wet rocky or sandy banks. Oxylophile to circumneutral. Central and southern Mo.: Boone, St. Louis, Franklin, Jefferson, St. Francois, Ste. Genevieve, Bollinger, Iron, Wayne, Dunklin, Ripley, Texas, Douglas, Taney, Stone, and McDonald counties.

***Panicum Bicknellii* Nash. See Contr. U. S. Nat. Herb. 15: 177. 1910.**

*Panicum Bushii* Nash (B & B).

Dry rocky woods and prairies. Oxylophile to circumneutral. Southern Mo.: Dent, Wayne, Bates, Christian, Barry, and McDonald counties.

***Panicum microcarpon* Muhl.**

Wet woods and low open ground. Oxylophile to circumneutral. Southern Mo.: St. Francois, Madison, Jefferson, Ste. Genevieve, Perry, Bollinger, Dunklin, Pemiscot, Butler, Ripley, Barry, and McDonald counties.

***Panicum nitidum* Lam.**

Low wet ground. Circumneutral. Southeastern Mo.: Carter Co. (according to Hitchcock & Chase).

***Panicum annulum* Ashe.**

Dry woods. Oxylophile to circumneutral. Southeastern Mo.: Carter Co.

***Panicum dichotomum* L.**

Rocky open woods. Oxylophile. Southern and east-central Mo.: Warren, St. Louis, Jefferson, St. Francois, Madison, Bollinger, Iron, Dunklin, Wayne, Ripley, Oregon, Crawford, Dent, Shannon, Texas, Miller, Morgan, Laclede, Hickory, Douglas, Taney, Greene, Barry, and Jasper counties.

***Panicum barbulatum* Michx.**

Rocky open woods and glades. Oxylophile. Southern Mo.: Jefferson, Ste. Genevieve, Perry, Bollinger, Wayne, Iron, Dunklin, Ripley, Carter, Shannon, Oregon, Gasconade, Texas, Howell, Christian, Taney, Barry, and McDonald counties.

***Panicum spretum* Schult.**

Alluvial woods, prairies, and sandy open ground. Circumneutral. Southern Mo.: New Madrid and Jasper counties.

***Panicum lanuginosum* Ell. var. *Lindheimeri* (Nash) Fernald, Rh. 36: 77. 1934.**

*Panicum Lindheimeri* Nash (G), (B & B).

Sandy or sterile woods and prairies. Oxylophile to circumneutral. General.

***Panicum lanuginosum* var. *septentrionale* Fernald, Rh. 36: 77. 1934.**

*Panicum tennesseense* Ashe, in part (G), (B & B).

*Panicum Lindheimeri* var. *septentrionale* (Fern.) Fernald, Rh. 23: 227. 1922.

Dry open woods and barrens. Oxylophile. Central and southern Mo.: Boone, Miller, Madison, Shannon, and Taney counties.

***Panicum lanuginosum* var. *fasciculatum* (Torr.) Fernald, Rh. 36: 77. 1934.**

*Panicum huachucae* Ashe (G), (B & B).

*Panicum tennesseense* Ashe, in part (G), (B & B).

*Panicum huachucae* var. *silvicola* Hitchc. & Chase (G).

*Panicum Lindheimeri* var. *fasciculatum* (Torr.) Fernald, Rh. 23: 228. 1922.

Dry open woods. Oxylophile to circumneutral. General.



*Panicum lanuginosum* var. *implicatum* (Scribn.) Fernald, Rh. 36: 77. 1934.

*Panicum implicatum* Scribn. (G), (B & B).

*Panicum Lindheimeri* var. *implicatum* (Scribn.) Fernald, Rh. 23: 228. 1922.

Wet woods and prairie swales. Oxylophile to circumneutral. Eastern, central, and southern Mo.: Schuyler, Knox, Boone, St. Louis, Jefferson, Ste. Genevieve, Dent, Shannon, Hickory, Polk, and Jasper counties.

*Panicum subvillosum* Ashe.

Dry rocky woods. Oxylophile. Southwestern Mo.: Jasper and Newton counties.

*Panicum praecocius* Hitchc. & Chase.

Dry open woods, prairies, glades, and thickets. Oxylophile to circumneutral. General.

*Panicum villosissimum* Nash.

Dry open woods and thickets, usually in cherty, sandy, or granitic soils. Oxylophile. East-central and southern Mo.: Montgomery, Warren, St. Louis, Jefferson, Dunklin, Ripley, Carter, Crawford, Shannon, Texas, Christian, Barry, and McDonald counties.

*Panicum sphaerocarpon* Ell.

Dry open woods, glades and prairies, and alluvial or moist ground along streams, and thickets, usually in rocky or sandy ground. Oxylophile. Central and southern Mo.: Lincoln, St. Louis, Jefferson, Franklin, Washington, Ste. Genevieve, Perry, Bollinger, St. Francois, Madison, Iron, Dent, Shannon, Carter, Phelps, Texas, Morgan, Douglas, Ozark, Taney, Boone, Hickory, Polk, St. Clair, Cedar, Jackson, Jasper, Newton, McDonald, and Barry counties.

*Panicum sphaerocarpon* var. *inflatum* (Scribn. & Smith) Hitchc. Rh. 13: 68. 1911.

Moist sandy open ground. Oxylophile. Southeastern Mo.: Shannon Co.

*Panicum polyanthes* Schultes.

Low wet woods, banks of streams, and prairie swales. Oxylophile to circumneutral. Eastern and middle Mo.: Lincoln, St. Charles, St. Louis, Franklin, Ste. Genevieve, Perry, Bollinger, Iron, Mississippi, Dunklin, Butler, Ripley, Crawford, Boone, and Phelps counties.

*Panicum malacophyllum* Nash.

Open sandy woods. Oxylophile. Local: Johnson and Jasper counties.

*Panicum oligosanthos* Schultes var. *Scribnerianum* (Nash) Fernald, Rh. 36: 80. 1934.

*Panicum Scribnerianum* Nash (G), (B & B).

Dry open woods, barrens, rocky banks, and dry prairies. Oxylophile. General.

*Panicum oligosanthos* var. *Helleri* (Nash) Fernald, Rh. 36: 80. 1934.

*Panicum Helleri* Nash (B & B).

Rocky open woods and prairies. Oxylophile. Western Mo.: Jackson, Jasper, Newton, and McDonald counties.

*Panicum Eavenelli* Scribn. & Merr.

Dry ground. Circumneutral to oxylophile. Southern Mo.: Ste. Genevieve, Bollinger, Dent, Shannon, Ripley, Texas, Polk, Cedar, Taney, Barry, and McDonald counties.

***Panicum Leibergii* (Vasey) Scribn.**

Prairies and open woods. Circumneutral to oxylophile. Central and southern Mo.: St. Louis, Phelps, Shannon, and Jackson counties.

***Panicum scoparium* Lam.**

Prairie swales and banks, chiefly on wet sands. Oxylophile. Southern Mo.: Mississippi, Howell, Henry, Vernon, Barton, and Jasper counties.

***Panicum commutatum* Schultes.**

Open or alluvial rich woods and thickets. Circumneutral. Southern Mo.: Bollinger, Dunklin, Pemiscot, Butler, Ripley, Ste. Genevieve, Carter, Shannon, Taney, Stone, and McDonald counties.

***Panicum commutatum* var. *Ashel* (Pearson) Fernald, Rh. 36: 83. 1934.**

*Panicum Ashelii* Pearson (G), (B & B).

Dry open woods and rocky banks. Circumneutral to oxylophile. Southern Mo.: Ripley, Shannon, Texas, Douglas, Taney, Stone, Christian, and McDonald counties.

***Panicum clandestinum* L.**

Open upland woods and thickets. Circumneutral to oxylophile. General.

***Panicum latifolium* L.**

Rich or rocky woods and thickets. Circumneutral. General.

***Panicum Boscii* Poir.**

*Panicum Porterianum* Nash.

Dry open woods and thickets. Circumneutral to oxylophile. General.

***Panicum Boscii* var. *molle* (Vasey) Hitchc. & Chase. See Contr. U. S. Nat. Herb. 15: 319-320. 1910.**

*Panicum pubifolium* Nash.

In similar situations to the typical form. Southern Mo.: Shannon, Wright, Taney, Barry, and McDonald counties.

***Panicum dichotomiflorum* Michx.**

Cultivated and waste ground, sometimes on glades and in alluvial soils, often a weed on dumps and ballast. Indifferent. General.

***Panicum flexile* (Gattinger) Scribn.**

Glades and rocky open ground. Oxylophile to circumneutral. Central and southern Mo. and locally north in Gentry Co.: St. Louis, Jefferson, Franklin, Ste. Genevieve, Dunklin, Crawford, Dent, Reynolds, Shannon, Maries, Pulaski, Camden, Boone, Randolph, Jackson, Polk, Greene, Ozark, Taney, Barry, Jasper, McDonald, and Gentry counties.

***Panicum Gattingeri* Nash.**

Dry rocky ground and barrens, and sometimes in wet ground along streams and sloughs, or as a weed in cultivated ground. Oxylophile to circumneutral. Central and southern Mo.: St. Louis, Jefferson, St. Francois, Wayne, Shannon, Boone, Jackson, Greene, Taney, Jasper, and McDonald counties.

***Panicum philadelphicum* Bernh.**

Glades and rocky open ground. Circumneutral. Southern and east-central Mo.: St. Louis, Jefferson, St. Francois, Dent, Shannon, Wayne, Maries, Texas, Howell, Henry, Jasper, and Newton counties.

***Panicum capillare* L.** Witch Grass.

Open cultivated, waste and alluvial ground. Indifferent. General and common.

***Panicum capillare* var. *occidentale* Rydb.** See Rh. 21: 111. 1919.

Occasionally found with the typical form: Putnam, Macon, Marion, Ralls, Pike, St. Louis, Cole, and Jackson counties.

**PANICUM MILLACEUM L.** Broom-corn Millet.

Sparingly escaped in cultivated and waste ground. Western Mo.: Jackson Co.

***Panicum virgatum* L.** Switch Grass.

Prairie swales, wet open woods, moist glades and ledges, and gravel bars along streams. Indifferent. General.

***Panicum agrostoides* Spreng.**

Wet prairies, open woods, and borders of sloughs and ponds. Circumneutral. Central and southern Mo.: Lincoln, St. Louis, St. Charles, Franklin, Jefferson, Stoddard, New Madrid, Dunklin, Butler, Wayne, Oregon, Shannon, Gasconade, Howell, Jackson, Vernon, Greene, and Jasper counties.

***Panicum stipitatum* Nash.**

*Panicum elongatum* Pursh, not Salisb.

Wet banks. Circumneutral. Southeastern Mo.: Wayne, Shannon, and Dunklin counties.

***Panicum anceps* Michx.**

Moist sandy ground, wet prairies, borders of streams, and low open woods. Oxylophile. Central and southern Mo.: St. Louis, Jefferson, Franklin, St. Francois, Iron, Perry, Cape Girardeau, Scott, Dunklin, Butler, Ripley, Crawford, Shannon, Pulaski, Barton, Greene, and Jasper counties.

***Panicum hians* Ell.** See Rh. 13: 67. 1911.

*Steinchisma hians* (Ell.) Nash (G), (B & B).

Swamps and wet woods. Oxylophile. Southeastern Mo.: Dunklin, Butler, and Ripley counties.

***Panicum obtusum* HBK.** Vine Mesquite.

Introduced in sandy soil along the Missouri River. Western Mo.: Jackson Co.

**ECHINOCHLOA CRUS-GALLI (L.) Beauv.** See Rh. 23: 58. 1921. Barnyard Grass.

Moist open and cultivated ground. Circumneutral. General but not common: Clark, Scott, and Jackson counties. This has often been confused with *Echinochloa pungens* and varieties.

**ECHINOCHLOA CRUS-GALLI f. *LONGISETA* (Trin.) Farwell.**

Alluvial and waste ground. Circumneutral. Scattered in central Mo.: St. Charles, St. Louis, Miller, and Jackson counties.

***Echinochloa pungens* (Poir.) Rydb.** See Rh. 37: 137. 1935. Barnyard Grass.

*Echinochloa muricata* (Michx.) Fernald.

Waste, cultivated, and alluvial ground, borders of streams, ponds, and sloughs, and thickets. Indifferent. General and common.

***Echinochloa pungens* var. *occidentalis* (Wiegand) Fernald & Griscom, Rh. 37: 137. 1935.**

*Echinochloa occidentalis* (Wiegand) Rydb. (R).

Waste, cultivated and alluvial ground. Indifferent. General: Putnam, Schuyler, Lincoln, Marion, St. Louis, Jefferson, Saline, and Taney counties.

*Echinochloa pungens* var. *microstachya* (Wiegand) Fernald & Griscom, Rh. 37: 137. 1935.

*Echinochloa muricata* var. *microstachya* Wiegand.

*Echinochloa microstachya* (Wiegand) Rydb. (R).

In similar situations to the preceding. Indifferent. Western Mo.: Jackson and Holt counties.

*Echinochloa pungens* var. *ludoviciana* (Wiegand) Fernald & Griscom, Rh. 37: 137. 1935.

*Echinochloa muricata* var. *ludoviciana* Wiegand.

Alluvial ground. Circumneutral. Scattered in central Mo.: St. Louis, Clay, and Jackson counties.

*ECHINOCHLOA COLONUM* (L.) Link. Jungle Rice.

Moist ground. Circumneutral. Southeastern Mo., local: Pemiscot Co.

*SETARIA LUTESCENS* (Weigel) Hubbard, Rh. 18: 232. 1916. Yellow Foxtail Grass.

*Setaria glauca* (L.) Beauv. (G), (B & B).

Waste and cultivated ground. Indifferent. General and common.

*Setaria geniculata* Beauv. Prairie Foxtail Grass.

*Setaria imberbis* R. & S. (G), (B & B).

Prairies, usually in sandy or cherty soil. Oxylophile. General but scattered: Putnam, Randolph, Linn, St. Louis, Mississippi, Dunklin, Shannon, Phelps, Hickory, Vernon, Barton, and Jasper counties.

*SETARIA VERTICILLATA* (L.) Beauv. Foxtail Grass.

Waste and cultivated ground. Circumneutral. General but less common than the following.

*SETARIA VIRIDIS* (L.) Beauv. Green Foxtail Grass.

Waste and cultivated ground. Indifferent. General and common.

*SETARIA ITALICA* (L.) Beauv. Italian Millet.

Escaped from cultivation, in waste ground and along railroads and roadsides. Scattered.

*SETARIA ITALICA* var. *GERMANICA* (Mill.) Richter. Hungarian Millet.

Occasionally escaped from cultivation, in waste ground and along railways and roadsides. Scattered.

*Cenchrus pauciflorus* Benth. See Contr. U. S. Nat. Herb. 22<sup>2</sup>: 67. 1920. Bur Grass, Sand-burs.

*Cenchrus carolinianus* of some auth., not Walt. (G), (B & B).

Waste ground and along roadsides and railways. Oxylophile. General but scattered.

*Erianthus strictus* Baldw. Beard Grass.

Swampy ground and wet open woods. Circumneutral. Southeastern Mo.: Dunklin Co.

*Erianthus alopecuroides* (L.) Ell. See Am. Jour. Bot. 21: 139. 1934. Woolly Beard Grass.

*Erianthus divaricatus* (L.) Hitchc. (G), (B & B).

- Moist rocky open woods and thickets. Oxylophile. Southern Mo.: Iron, Shannon, Carter, Dunklin, Ozark, Taney, Christian, Stone, and Barry counties.
- ARTHRAOXON HISPIDUS* (Thunb.) Merr. var. *CRYPTATHERUS* (Hack.) Honda.  
Moist grassy banks. Circumneutral. Introduced in St. Louis Co.
- Andropogon scoparius* Michx. var. *genuinus* Fernald & Griscom, Rh. 37: 144. 1935. Blue-stem, Prairie Beard Grass.  
*Andropogon scoparius* var. *villosissimus* Kearney.  
Prairies, glades, open and waste ground. Oxylophile. General.
- Andropogon scoparius* var. *frequens* Hubbard, Rh. 19: 103. 1917.  
Similar situations to the preceding. Oxylophile. General.
- Andropogon scoparius* var. *divergens* Hack. See Rh. 37: 144. 1935.  
Prairies, glades, and sandy open ground. Oxylophile. Eastern Mo.: Lewis, St. Louis, and Scott counties.
- Andropogon virginicus* L. var. *genuinus* Fernald & Griscom, Rh. 37: 142. 1935.  
Old Field Beard Grass, Broom Sedge.  
Prairies, glades, old fields, and waste ground. Oxylophile. Central and southern Mo. south and east of a line drawn from Lincoln, Boone, and Cooper counties to Henry and Vernon counties.
- Andropogon virginicus* var. *tetrastachyus* (Ell.) Hack. See Rh. 37: 142. 1935.  
Sandy open and waste ground. Oxylophile. Southeastern Mo.: Madison and Mississippi counties.
- Andropogon provincialis* Lam. See Rh. 37: 146. 1935. Big Blue-stem, Blue-joint Turkeyfoot.  
*Andropogon furcatus* Muhl. (G), (B & B).  
Prairies, glades, and open rocky woods. Oxylophile to circumneutral. General.
- Andropogon provincialis* var. *chrysocomus* (Nash) Fernald & Griscom, Rh. 37: 147. 1935.  
*Andropogon chrysocomus* Nash (B & B).  
Prairies and waste ground. Oxylophile. Southwestern Mo.: Jackson, Stone, and Jasper counties.
- Andropogon ternarius* Michx. Silvery Beard Grass.  
Prairies and rocky open slopes, usually in sandy or cherty soils. Oxylophile. Southern Mo.: Ste. Genevieve, Madison, Stoddard, Dunklin, Jasper, and McDonald counties.
- Andropogon Elliottii* Chapm.  
Prairies, glades, and sandy open woods. Oxylophile. Southern Mo.: Jefferson, Madison, Shannon, and Barry counties.
- Andropogon Elliottii* var. *projectus* Fernald & Griscom, Rh. 37: 139. 1935.  
Similar situations to the preceding. Oxylophile. Southern Mo.: Shannon and Taney counties.
- Andropogon saccharoides* Sw. Beard Grass.  
*Andropogon Torreyanus* Steud.  
*Amphilophis saccharoides* (Sw.) Nash (B & B).  
Prairies, glades, and rocky ledges. Oxylophile. Southwestern Mo.: Jasper and McDonald counties, and also adventive in Jackson Co.

**SORGHUM HALEPENSE** (L.) Pers. Johnson Grass.

Introduced and established in low meadows and fertile cultivated ground. Often a pernicious weed. Circumneutral. Scattered but becoming more general.

**SORGHUM VULGARE** L. Sorghum Cane.

Escaped in waste ground and along railways and roadsides. Circumneutral. Scattered.

**Sorghastrum nutans** (L.) Nash. Indian Grass.

Prairies, glades, and open rocky woods. Oxylophile. General.

**Manisuris cylindrica** (Michx.) Kuntze. See Hitchcock, Man. Grasses U. S.

Misc. Publ. U. S. Dept. Agr. 200: 761 and 881. 1935.

*Rottboellia cylindrica* (Michx.) Torr., not Willd. (G).

*Coelorachis cylindrica* (Michx.) Nash (B & B).

Prairies and sandy open ground. Oxylophile. Scattered in southeastern and western Mo.: Mississippi and Jackson counties.

The common cultivated cereals, wheat (*Triticum aestivum*), rye (*Secale cereale*), and barley (*Hordeum sativum*), as well as Indian corn (*Zea Mays*), are frequently found growing as waifs along roads and railroads and on dumps, but as they do not self-seed nor show any sign of persisting they can scarcely be considered as additions to the flora. Sometimes *Zea Mays* is found self-seeding in rich or rocky woods where probably carried by man or lower animals, such as squirrels, and appears as a spontaneous part of the flora. Rice (*Oryza sativa*) is infrequently found as a waif in cultivated or waste ground, as an escape from cultivation.

## Fam. CYPERACEAE

**Cyperus flavescens** L.

Low wet ground. Circumneutral. Central and southern Mo., mostly in the eastern counties: St. Louis, Jefferson, Washington, St. Francois, Iron, Madison, Dunklin, Butler, Carter, Shannon, Boone, Miller, and Webster counties.

**Cyperus diandrus** Torr.

Low alluvial ground along streams and sloughs. Circumneutral. General.

**Cyperus compressus** L. Coco Grass.

Swamps and moist cultivated ground. Circumneutral. Eastern Mo. south of the Missouri River: St. Louis, Dunklin, and Butler counties.

**Cyperus rivularis** Kunth.

Wet open ground. Circumneutral. General.

**Cyperus Gatesii** Torr.

Low woods and swamps. Circumneutral. Southeastern Mo., local: Dunklin Co.

**Cyperus inflexus** Muhl.

*Cyperus aristatus* Rottb. (G).

Wet depressions in glades, gravel, and sand bars along streams, alluvial and moist cultivated ground. Oxylophile. General, but commonest in central and southern Mo.: Marion, Ralls, Lincoln, St. Louis, Jefferson, Iron, Madison, Perry, Mississippi, Dunklin, Butler, Reynolds, Pulaski, Montgomery, Miller, Laclede, Boone, Saline, Clinton, Holt, Clay, Jackson, Henry, Cedar, Greene, Jasper, Newton, and McDonald counties.



***Cyperus Schweinitzii* Torr.**

Low ground along streams and about ponds. Circumneutral. Scattered: St. Louis, Jefferson, and Jackson counties.

***Cyperus acuminatus* Torr. & Hook.**

Low open ground. Circumneutral. General.

***Cyperus pseudovegetus* Steud.**

Wet prairies and borders of streams and ponds. Circumneutral. Central and southern Mo.: Boone, New Madrid, Mississippi, Stoddard, Butler, Ripley, Jasper, Newton, and McDonald counties.

***Cyperus Hallii* Britton.**

Missouri River bottoms. Circumneutral. Western Mo.: Jackson Co.

***Cyperus esculentus* L. Yellow Nut-grass.**

Wet woods, sand and gravel bars along streams, prairie swales, and moist cultivated ground. Circumneutral. General.

***Cyperus esculentus* var. *longispicatus* Boeckl.**

Occasionally found with the preceding, in similar situations.

***Cyperus esculentus* var. *angustispicatus* Britton.**

Low wet ground. Circumneutral. Jasper Co.

***Cyperus erythrorhizos* Muhl.**

Including *Cyperus erythrorhizos* var. *pumilus* Engelm., merely a dwarf form.

***Cyperus Halei* Torr.**

Wet woods, low and alluvial ground along streams and lakes. Circumneutral. General but scattered: Lincoln, St. Louis, Perry, Dunklin, Butler, Putnam, Boone, Saline, Atchison, Holt, Clinton, Dekalb, Clay, Carroll, and Jackson counties.

***Cyperus ferruginescens* Boeckl. See Rh. 37: 150. 1935.**

*Cyperus ferax* of auth. in part, not Rich. (G).

*Cyperus speciosus* of auth. in part, not Vahl (B & B).

Low ground along streams and sloughs, especially the larger rivers. Circumneutral. General. This has been confused with *Cyperus ferax* which is known only in southeastern Mo.

***Cyperus ferax* Rich. See Rh. 37: 150. 1935.**

Swampy woods along St. Francis River. Circumneutral. Southeastern Mo., local: Dunklin Co. This has been confused with *Cyperus ferruginescens*.

***Cyperus Engelmanni* Steud.**

Low alluvial ground. Circumneutral. East-central Mo., local: St. Louis Co.

***Cyperus strigosus* L. See Rh. 37: 150-151. 1935.**

*Cyperus strigosus* var. *compositus* Britton (G).

*Cyperus strigosus* var. *elongatus* Britton (G).

*Cyperus strigosus* var. *capitatus* Britton, wrongly ascribed to Boeckeler (G).

Low wet ground, along streams, ponds, and sloughs, sometimes in waste or cultivated soils. Circumneutral. General.

***Cyperus strigosus* var. *robustior* Britton. See Rh. 37: 151. 1935.**

Commonly found with the typical form, in similar situations.

***Cyperus refractus* Engelm.**

Open woods or open ground, usually in dry sandy or sterile soils, also in low ground along streams, and on gravel bars. Oxylophile. Eastern and southern Mo., south of the Missouri River: St. Louis, Jefferson, Ste. Genevieve, St. Francois, Wayne, Stoddard, Butler, Reynolds, Ripley, Pulaski, Crawford, Dent, Shannon, Oregon, Howell, and Barry counties.

***Cyperus lancastriensis* Porter.**

Prairie swales and moist rocky slopes and glades. Oxylophile to circumneutral. Southern and east-central Mo.: St. Louis, Madison, Jasper, and Newton counties.

***Cyperus retrofractus* (L.) Torr.**

Sandy open ground, in woods or fields. Oxylophile. Southeastern Mo.: Dunklin, Ripley, and Carter counties.

***Cyperus dipsaciformis* Fernald.**

*Cyperus retrofractus* of auth. in part (B & B).

Sandy open woods or fields. Oxylophile. Southeastern Mo.: Mississippi and Dunklin counties.

***Cyperus ovularis* (Michx.) Torr. Hedgehog Club-rush.**

Sandy soil along streams, dry open woods, glades, and prairies. Oxylophile to circumneutral. Central and southern Mo. south of a line drawn from St. Louis, Montgomery, and Boone counties to Jackson Co.

***Cyperus ovularis* var. *robustus* Boeckl.**

Occasionally found with the typical form, in similar situations.

***Cyperus globulosus* Aubl. See Rh. 37: 153-154. 1935.**

*Cyperus echinatus* (Ell.) Wood (G).

Open woods and prairies. Circumneutral. Southeastern Mo.: Dunklin Co.

***Cyperus filiculmis* Vahl. See Rh. 37: 153. 1935.**

*Cyperus Bushii* Britton (B & B), in part.

Dry open woods, prairies, and glades. Circumneutral to oxylophile. General.

***Cyperus filiculmis* var. *macilentus* Fernald. See Rh. 37: 153. 1935.**

Sandy open ground, glades, and banks of streams. Oxylophile. Eastern, central, and southern Mo.: Shelby, St. Charles, Jefferson, Wayne, Bollinger, Dunklin, Morgan, Hickory, Cedar, and Saline counties.

***Kyllinga pumila* Michx.**

Wet open woods and prairies. Circumneutral. General but not common.

***Dulichium arundinaceum* (L.) Britton.**

Borders of sloughs and ponds. Circumneutral. General but uncommon: St. Charles, St. Louis, Iron, Shannon, Howell, Boone, Jackson, Cass, and Newton counties.

***Eleocharis quadrangulata* (Michx.) R. & S. See Rh. 31: 132-133. 1929.**

Low muddy banks of ponds and streams. Circumneutral. Central and southern Mo., uncommon: St. Louis, Iron, Stoddard, New Madrid, Ripley, Shannon, Texas, Greene, and Newton counties.

***Eleocharis obtusa* (Willd.) Schultes. Spike Rush.**

Muddy borders of ponds and streams. Circumneutral. General and common.

***Eleocharis Engelmanni* Steud.**

Muddy borders of streams, sloughs, and ponds. Circumneutral. Eastern, southern, and central Mo.: Lincoln, St. Louis, Wayne, Iron, Shannon, Dent, Howell, Greene, Jasper, Barry, McDonald, and Jackson counties.

***Eleocharis Engelmanni* var. *robusta* Fernald.**

Occasionally found with the typical form, in similar situations: Iron, Shannon, Lawrence, and Greene counties.

***Eleocharis mamillata* Lindb. f. See Rh. 31: 66-67. 1929. Spike Rush.**

*Eleocharis macrostachya* Britton (B & B).

Prairie swales and borders of streams and ponds. Circumneutral. Central and southern Mo.: Lincoln, St. Charles, St. Louis, Franklin, Washington, Lafayette, Jackson, and Jasper counties.

***Eleocharis lanceolata* Fernald.**

Wet sandy open ground and glades. Oxylophile to circumneutral. Southern Mo.: Carter, Jasper, and Barton counties.

***Eleocharis Smallii* Britton. See Rh. 31: 64-66. 1929.**

Wet meadows, prairies, and sloughs. Circumneutral. General.

***Eleocharis calva* Torr. See Rh. 31: 68-70. 1929. Creeping Spike Rush.**

*Eleocharis palustris* (L.) R. & S. var. *glaucescens* of Am. auth. (G), (B & B).

Wet prairies, meadows, and sloughs. Circumneutral. General and common.

***Eleocharis capitata* (L.) R. Br. var. *verrucosa* Svenson, Rh. 34: 202. 1932.**

*Eleocharis tenuis* of auth. in part (G), (B & B).

Low woods and swampy open ground. Circumneutral. General.

***Eleocharis compressa* Sulliv. See Rh. 34: 215. 1932.**

*Eleocharis acuminata* (Muhl.) Nees (G), (B & B).

Wet prairies, depressions in glades, and borders of sloughs, ponds, and ditches. Calciphile to circumneutral. Eastern, central, and southern Mo.: Lincoln, Montgomery, St. Louis, Franklin, Jefferson, Washington, Ste. Genevieve, Iron, Texas, Shannon, Mississippi, Miller, Camden, Maries, Pulaaki, Laclede, Wright, Greene, Douglas, Vernon, Jasper, Barry, and Jackson counties.

***Eleocharis parvula* (R. & S.) Link. See Rh. 31: 168. 1929.**

*Scirpus nanus* Spreng. (G), (B & B).

Marshy ground about saline springs and ponds. Middle Mo.: Cooper and Saline counties.

***Eleocharis acicularis* (L.) R. & S. var. *typica* Svenson, Rh. 31: 184. 1929.**

Borders of ponds and sloughs. Circumneutral. General but scattered: Putnam, Lincoln, St. Louis, Jefferson, Franklin, Dent, Carter, Shannon, Howell, Holt, Jackson, Webster, Vernon, Jasper, and Greene counties.

***Eleocharis acicularis* var. *gracilescens* Svenson, Rh. 31: 191. 1929.**

Springs and muddy borders of ponds and sloughs. Circumneutral. Central and southern Mo., scattered: St. Louis, Perry, Ripley, Phelps, Laclede, Texas, Ozark, Greene, and Jasper counties.

***Stenophyllus capillaris* (L.) Britton.**

Prairie swales, glades, and barrens. Oxylophile. General but commonest in Ozark region.

**Stenophyllus capillaris** var. **cryptostachys** Fernald, Rh. 19: 154. 1917.

Sandy open woods. Oxylophile. Southern Mo., local: Shannon Co.

**Fimbristylis castanea** (Michx.) Vahl.

Prairies and wet depressions in glades. Circumneutral to oxylophile. Central and southern Mo.: St. Louis, Shannon, Benton, Dallas, Cedar, Jackson, and Jasper counties.

**Fimbristylis castanea** var. **puberula** (Michx.) Britton.

*Fimbristylis puberula* (Michx.) Vahl (S).

High sandy prairies, upland meadows, and glades. Oxylophile to circumneutral. Central and southern Mo.: Montgomery, St. Louis, Jefferson, Washington, Franklin, Reynolds, Phelps, Maries, Madison, Iron, Douglas, Greene, Ozark, Taney, Stone, Hickory, Cedar, St. Clair, Barry, Barton, Jasper, and Newton counties.

**Fimbristylis laxa** Vahl.

*Fimbristylis Baldwiniana* Torr. (B & B).

High sandy prairies, banks, and moist places in glades, and gravel or sand bars along streams. Oxylophile. Central and southern Mo.: Madison, Mississippi, Dunklin, Cooper, Cedar, Jackson, Vernon, Greene, Jasper, Newton, and McDonald counties.

**Fimbristylis VahlII** (Lam.) Link.

Moist sandy open ground. Oxylophile. Southern Mo., scattered: Wayne, Dunklin, and Barry counties.

**Fimbristylis mucronulata** (Michx.) Blake, Rh. 20: 25. 1918.

*Fimbristylis autumnalis* of Am. auth. (G), (B & B).

Prairies and sandy fields. Oxylophile to circumneutral. Central and southern Mo.: St. Francois, Perry, New Madrid, Dunklin, Howell, Jackson, Jasper, and Newton counties.

**Fimbristylis autumnalis** (L.) R. & S. See Rh. 20: 24. 1918.

*Fimbristylis Frankii* Steud. (G).

*Fimbristylis geminata* (Nees) Kunth (B & B).

Sandy fields, sandy open ground along streams, and prairies. Circumneutral to oxylophile. General.

**Scirpus planifolius** Muhl.

Dry open woods and shaded sandstone ledges. Oxylophile. Southern Mo.: Shannon and Douglas counties.

**Scirpus americanus** Pers. Three-square.

Wet woods, sloughs, swamps, and alluvial banks of streams. Circumneutral to oxylophile. General and common.

**Scirpus validus** Vahl. Great Bulrush.

Wet prairies and borders of sloughs and ponds. Circumneutral. General.

**Scirpus acutus** Muhl. See Rh. 22: 55-56. 1920.

*Scirpus occidentalis* (Wats.) Chase (G), (B & B).

Ponds and sloughs. Calciphile to circumneutral. Scattered in northern and western Mo.: Adair, Saline, Holt, Buchanan, Andrew, Platte, Jackson, and Greene counties.

***Scirpus campestris* Britton.** Bayonet Grass.

Sandy open ground. Calciphile to circumneutral. Northwestern Mo., local: Holt Co.

***Scirpus fluviatilis* (Torr.) Gray.** River Bulrush.

Wet ground along streams, and borders of ponds and sloughs. Circumneutral. General.

***Scirpus atrovirens* Muhl.** Common Bulrush.

Boggy or swampy open ground. Circumneutral. General.

***Scirpus atrovirens* var. *georgianus* (Harper) Fernald, Rh. 23: 134. 1921.**

*Scirpus georgianus* Harper (G).

Low wet woods. Circumneutral to oxylophile. Southeastern Mo.: Iron Co.

***Scirpus pallidus* (Britton) Fernald.**

Wet open ground. Circumneutral. Western Mo.: Dekalb and Jasper counties.

***Scirpus divaricatus* Ell.**

Swamps and low wet woods. Circumneutral. Southeastern Mo.: Dunklin, Butler, and Ripley counties.

***Scirpus lineatus* Michx.**

Wet prairies and bogs. Circumneutral. General.

***Scirpus pedicellatus* Fernald.**

Sloughs and ponds. Circumneutral. Northern Mo.: Putnam and Adair counties.

***Scirpus Eriophorum* Michx.**

Swamps and low wet woods. Circumneutral. General but scattered: Lincoln, Iron, Stoddard, Dunklin, Butler, Caldwell, and Jackson counties.

***Scirpus carinatus* Gray.**

Glades, barrens, and sandy open ground. Oxylophile. Southern Mo., rare: Dunklin, Jasper, Newton, and McDonald counties.

***Puiren simplex* Vahl.** Umbrella grass.

Bogs and swampy open ground. Circumneutral to calciphile. Northwestern, central, and southern Mo., mostly in the eastern Ozark region: Washington, Crawford, St. Francois, Iron, Dent, Wayne, Ripley, Shannon, Texas, Holt, and Jackson counties.

***Hemicarpha micrantha* (Vahl) Pax.**

Sand bars along streams, borders of ponds, and wet depressions in glades. Circumneutral to oxylophile. General but scattered: Clark, Lincoln, St. Louis, Jefferson, Franklin, Perry, Bollinger, Mississippi, Dunklin, Butler, Wayne, Reynolds, Oregon, Howell, Miller, Pulaski, Holt, Jackson, Jasper, Barry, and Stone counties.

***Hemicarpha micrantha* var. *aristulata* Coville.**

Sandy borders of ponds, lakes, and streams, and wet depressions in glades. Western Mo., scattered: Buchanan, Barry, and Stone counties.

***Rynchospora corniculata* (Lam.) Gray.** Horned Rush.

Swamps, low wet woods, and along drainage canals. Circumneutral to oxylophile. Eastern Mo., mostly in the lowland counties: Audrain, St. Louis, Iron,

Cape Girardeau, Stoddard, New Madrid, Mississippi, Dunklin, and Butler counties.

***Rynchospora macrostachya* Torr.**

Low swampy woods. Circumneutral. Southeastern Mo.: Bollinger, Stoddard, Pemiscot, Butler, and Ripley counties.

***Rynchospora cymosa* Ell.**

Prairie swales, meadows, and wet rocky banks. Oxylophile to circumneutral. Southern Mo.: Madison, Shannon, St. Clair, Vernon, Barton, and Jasper counties. This has sometimes been confused with *R. compressa* which does not occur in Mo.

***Rynchospora capillacea* Torr.**

Moist rocky ground and wet ledges along bluffs. Calciphile. Eastern Mo., south of the Missouri River: Jefferson, Washington, St. Francois, Ripley, Shannon, and Texas counties.

***Rynchospora capitellata* (Michx.) Vahl. See Rh. 20: 27. 1918. False Bog Rush. *Rynchospora glomerata* of auth., not Vahl (G), (B & B).**

High prairies and rocky or sandy banks of streams. Oxylophile. Southern Mo.: St. Francois, Ste. Genevieve, Perry, Madison, Iron, Reynolds, Ripley, Dent, Howell, Shannon, Greene, Barton, and Jasper counties.

***Scleria triglomerata* Michx. Tall Nut-grass.**

Rocky open woods, glades, and prairies. Oxylophile. General but scattered: Clark, Lewis, Macon, St. Louis, Jefferson, Iron, Reynolds, Dent, Shannon, Phelps, Howell, Mercer, Linn, Stone, Jackson, Barton, Jasper, Newton, McDonald, and Barry counties.

***Scleria pauciflora* Muhl.**

Sandy prairies and barrens. Oxylophile. Southern Mo.: Jefferson, Iron, Shannon, Wright, Ozark, Jasper, and Barry counties.

***Scleria pauciflora* var. *caroliniana* (Willd.) Wood.**

Rocky woods and glades. Oxylophile. Southwestern Mo.: Hickory, Jasper, and Newton counties.

***Scleria oligantha* Michx.**

Rocky open woods and glades. Circumneutral. Southwestern Mo.: Ozark and Barry counties.

***Scleria ciliata* Michx.**

*Scleria Elliottii* Chapm. (G).

High sandy prairies and open rocky woods. Oxylophile. Southern Mo.: Franklin, Washington, Iron, Carter, Shannon, Dent, Taney, Barry, Barton, Jasper, and McDonald counties.

***Scleria setacea* Poir.**

*Scleria reticularis* Michx. var. *pubescens* Britton (G).

Open ground. Southwestern Mo., local: Greene Co.

***Scleria verticillata* Muhl.**

Moist sandy open ground. Oxylophile. Southern Mo., scattered: Jefferson and McDonald counties.



***Carex praegracilis* Boott.**

*Carex camporum* Mack. (B & B).

Dry open ground. Circumneutral. Introduced in Jackson Co. This has sometimes been confused with *Carex siccata* which does not occur in Mo.

***Carex Sartwellii* Dewey.**

Low meadows. Circumneutral. Western Mo.: Jackson Co.

***Carex retroflexa* Muhl.**

Dry open woods. Circumneutral. General: Schuyler, Shelby, Monroe, St. Louis, Jefferson, Franklin, Ste. Genevieve, Wayne, Butler, Dunklin, Shannon, Phelps, Laclede, Boone, Clay, Jackson, Jasper, and Stone counties.

***Carex texensis* (Torr.) Bailey.**

*Carex retroflexa* var. *texensis* (Torr.) Fernald (G).

Swampy open ground. Circumneutral. Southeastern Mo.: Cape Girardeau Co.

***Carex rosea* Schkuhr.**

*Carex rosea* var. *minor* Boott (G).

Dry rocky woods and prairies. Circumneutral. General.

***Carex convoluta* Mack. Bull. Torr. Bot. Club 43: 428. 1916.**

*Carex rosea* of auth., not Schkuhr (G), (B & B).

Dry rocky woods. Circumneutral. General.

***Carex cephalophora* Muhl.**

Prairies, swales, meadows, and open woods. Circumneutral. General.

***Carex Leavenworthii* Dewey.**

Prairies and open rocky woods. Circumneutral. General.

***Carex mesochorea* Mack. Bull. Torr. Bot. Club 37: 246. 1910.**

Central and southern Mo.: Lincoln, St. Louis, Jackson, Greene, and Stone counties.

***Carex arkansana* Bailey.**

Prairie swales and open woods. Circumneutral. Southwestern Mo.: Jasper Co.

***Carex Muhlenbergii* Schkuhr.**

Dry open woods and prairies. Circumneutral. General.

***Carex Muhlenbergii* var. *enervis* Boott.**

*Carex plana* Mack. Bull. Torr. Bot. Club 50: 350. 1923.

Dry prairies, meadows, and open ground. Circumneutral. General.

***Carex austrina* (Small) Mack.**

Rocky prairies and glades. Circumneutral to calciphile. Western and southern Mo.: Shannon, Harrison, Jackson, Christian, Taney, and Jasper counties.

***Carex gravida* Bailey.**

*Carex gravida* var. *lazifolia* Bailey, in part (G).

Prairies and dry open banks. Circumneutral. General.

***Carex Lunelliana* Mack. Bull. Torr. Bot. Club 42: 615. 1915.**

*Carex gravida* var. *lazifolia* Bailey, in part (G).

Prairies and dry open banks. Circumneutral. General.

**Carex aggregata** Mack. Bull. Torr. Bot. Club 37: 246. 1910.

Prairie swales. Circumneutral to calciphile. Central and western Mo.: Washington, Osage, Jackson, and Jasper counties.

**Carex cephaloidea** Dewey.

Dry open ground and hillsides. Circumneutral. Scattered: St. Louis and Jackson counties.

**Carex sparganioides** Muhl.

Margins of ponds, bogs, and swampy woods. Circumneutral. General but scattered: Schuyler, Putnam, Knox, St. Louis, Jefferson, Washington, Shannon, Boone, Linn, Harrison, Atchison, Jackson, Dallas, Barton, Jasper, and Lawrence counties.

**Carex triangularis** Boeckl.

Swampy open ground. Oxylophile. Southeastern Mo.: Wayne and Dunklin counties.

**Carex annectens** Bicknell, Bull. Torr. Bot. Club 35: 492. 1908.

*Carex xanthocarpa* var. *annectens* Bicknell.

*Carex annectens* var. *xanthocarpa* Wiegand.

*Carex setacea* var. *ambigua* (Barratt) Fernald, in part (G), (B & B).

*Carex brachyglossa* Mack. Bull. Torr. Bot. Club 50: 355. 1923.

Prairies, dry open woods, and open soils. Circumneutral to oxylophile. General.

**Carex vulpinoidea** Michx. Fox Sedge.

Wet prairies, meadows, and borders of sloughs. Circumneutral. General.

**Carex decomposita** Muhl.

Swamps and boggy ground. Circumneutral. Southeastern Mo.: Dunklin, Dent, Shannon, and Texas counties.

**Carex oklahomensis** Mack. Torreyia 14: 126. 1914.

Prairie swales and borders of ponds and ditches. Circumneutral to calciphile. Western Mo.: Jackson, Jasper, and Newton counties.

**Carex stipata** Muhl.

Prairie swales and borders of ponds and ditches. Circumneutral. General but scattered: Shelby, Lincoln, St. Louis, Jefferson, Iron, Madison, Wayne, Butler, Shannon, Boone, Jackson, Jasper, and Newton counties.

**Carex laevivaginata** (Kükenth.) Mack. in B. & B. Ill. Fl. ed. 2, 1: 371. 1913.

Wet meadows and open bogs. Circumneutral. Eastern Mo., local: St. Louis Co.

**Carex crus-corvi** Shuttlw.

Low wet woods, meadows, and swampy prairies. Circumneutral. General.

**Carex conjuncta** Boott.

Wet meadows, swamps, and prairie swales. Circumneutral. General: Scotland, Adair, Sullivan, Boone, St. Louis, Franklin, Howell, Stone, Clay, Jackson, and Jasper counties.

**Carex interior** Bailey.

*Carex scirpoides* Schkuhr (G).

Wet open ground. Circumneutral to oxylophile. Southeastern Mo.: Iron and Shannon counties.

**Carex scoparia** Schkuhr.

*Carex scoparia* var. *moniliformis* Tuckerm. (G), in part.

Prairie swales and wet meadows. Circumneutral. General but scattered: Scotland, Schuyler, Ralls, Audrain, St. Louis, Franklin, Howell, Boone, Jackson, Benton, Wright, Greene, and Jasper counties.

**Carex tenera** Dewey. See Rh. 23: 235. 1921. Straw Sedge.

*Carex straminea* of Am. auth., not Willd. (G), (B & B).

Dry open woods and prairies. Circumneutral. General.

**Carex normalis** Mack. Bull. Torr. Bot. Club 37: 244. 1910.

*Carex mirabilis* Dewey, not Host (G).

*Carex mirabilis* var. *perlonga* Fernald (G), in part.

Prairies and open woods. Circumneutral. General.

**Carex festucacea** Schkuhr.

Dry rocky ground, meadows, and prairies. Circumneutral. General.

**Carex brevior** (Dewey) Mack. Am. Midl. Nat. 4: 235. 1915.

*Carex molesta* Mack.

*Carex festucacea* var. *brevior* (Dewey) Fernald (G).

Dry rocky ground, meadows, and prairies. Circumneutral. General.

**Carex hornathodes** Fernald.

Open swampy woods and prairies. Circumneutral. Southwestern Mo., local: Jasper Co.

**Carex projecta** Mack.

Low swampy ground. Circumneutral. Northeastern Mo.: Adair Co.

**Carex Bicknellii** Britton.

Dry open woods and prairies. Circumneutral. General.

**Carex straminea** Willd.

Prairie swales, meadows, and swampy open woods. Circumneutral to oxylophile. General.

**Carex tribuloides** Wahlenb.

Prairie swales and swampy open woods. Circumneutral. General.

**Carex tribuloides** var. *sangamonensis* Clokey, Rh. 21: 84. 1919.

Occasionally found with the typical form. St. Louis, Boone, and Jackson counties.

**Carex cristatella** Britton.

*Carex cristata* Schwein., not Clairi (G).

Prairie swales, wet woods, and thickets. Circumneutral. Northern and central Mo.: Mercer, Adair, Knox, Monroe, Lincoln, St. Louis, Jefferson, Boone, Saline, Clay, and Jackson counties.

**Carex muskingumensis** Schwein.

Wet woods and swampy prairies. Circumneutral. Northern and central Mo.: Clark, Ralls, St. Louis, Jefferson, Adair, Livingston, and Jackson counties.

**Carex Jamesii** Schwein.

Rocky or rich woods and along base of bluffs and alluvial soils of river banks and ponds and sloughs. Circumneutral. General.

**Carex physorhyncha** Liebm.

Low wet woods. Circumneutral. Southeastern Mo., local: Dunklin Co. This has been confused with *Carex albicans* of some authors and *Carex Emmonsii* which do not occur in Missouri.

**Carex pennsylvanica** Lam. var. *digyna* Boeckl.

*Carex pennsylvanica* of auth. in part (G).

*Carex heliophila* Mack. *Torreyana* 13: 15. 1913.

Prairies, dry woods, and rocky open banks. Oxylophile. Northern and central Mo.: Schuyler, St. Louis, Daviess, Clay, and Jackson counties. *Carex heliophila* cannot be considered as specifically distinct from *Carex pennsylvanica*, and the Mo. material should be treated as a variety of the latter species.

**Carex artitecta** Mack. See N. Am. Fl. 18: 189. 1935.

*Carex varia* Muhl., not Lumnitzer nor Host (G), (B & B).

*Carex varia* var. *colorata* Bailey, in part.

Dry rocky woods and prairies. Oxylophile. General.

**Carex nigro-marginata** Schwein.

Open woods. Circumneutral. Southeastern Mo.: Crowleys Ridge, Dunklin Co.

**Carex umbellata** Schkuhr.

*Carex microrhyncha* Mack. Bull. Torr. Bot. Club 40: 548. 1913.

Rocky prairies, dry rocky or upland woods, and glades. Oxylophile. General: known north of the Missouri River in St. Charles, Warren, Montgomery, Callaway, Boone, Audrain, and Grundy counties. The Missouri material has been referred by Mackenzie to *Carex microrhyncha*, but this does not appear to be distinct from *Carex umbellata*.

**Carex hirtifolia** Mack. Bull. Torr. Bot. Club 37: 244. 1910.

*Carex pubescens* Muhl., not Poir. (G), (B & B).

Rich woods, prairies, and meadows. Circumneutral. General.

**Carex eburnea** Boott.

Shaded limestone bluffs, and rarely on sandstone. Calciphile to circumneutral. Eastern, central, and southern Mo., south and east of a line from Lincoln, Monroe, Boone, Morgan, Benton, and Hickory counties to McDonald Co.

**Carex tetanica** Schkuhr.

*Carex tetanica* var. *Woodii* (Dewey) Bailey (G).

*Carex Woodii* Dewey.

*Carex colorata* Mack. (B & B).

Open ground. Circumneutral. Northwestern Mo.: Atchison Co.

**Carex Meadii** Dewey.

*Carex tetanica* var. *Meadii* (Dewey) Bailey (G).

Upland prairies, glades, and meadows. Calciphile to circumneutral. General and common. This has frequently been confused with *Carex Crowei*.

**Carex Careyana** Torr.

Rich or rocky woods. Circumneutral. East-central and southern Mo.: St. Louis, Shannon, Taney, and Stone counties.

**Carex digitalis** Willd.

Dry or rocky open woods and moist ledges. Circumneutral. Southern Mo.: Jefferson, Dunklin, Shannon, Douglas, Wright, and Taney counties.

**Carex laxiculmis** Schwein.

Rich woods. Circumneutral. Southeastern Mo., local: Ripley Co.

**Carex laxiculmis** var. *copulata* (Bailey) Fernald.

Rich or rocky woods. Circumneutral. Local: Shannon Co.

**Carex albursina** Sheldon. See Rh. 24: 193. 1922.

*Carex laxiflora* var. *latifolia* Boott (G).

Rich woods. Circumneutral. General but not common.

**Carex blanda** Dewey. See Rh. 24: 194. 1922.

*Carex laxiflora* var. *blanda* (Dewey) Boott (G).

*Carex laxiflora* var. *varians* of auth., not Bailey (G).

Rich or rocky woods. Circumneutral. General.

**Carex laxiflora** Lam. See Rh. 24: 195. 1922.

*Carex laxiflora* var. *gracillima* Boott (G).

Rich woods and along shaded bluffs. Circumneutral. General.

**Carex anceps** Willd.

*Carex laxiflora* var. *patulifolia* (Dewey) Carey (G).

Rich woods and along rocky bluffs and ledges. Circumneutral. Western Mo.: Jackson, Jasper, Barry, and Stone counties.

**Carex granularis** Muhl.

Moist woods and meadows. Circumneutral. General.

**Carex granularis** var. *Haleana* (Olney) Porter.

*Carex Shriveri* Britton (B & B).

Moist meadows and low open ground. Circumneutral. Southern Mo., scattered: Wayne and Phelps counties.

**Carex Crawei** Dewey.

Wet places in glades. Calciphile. East-central and southern Mo.: Jefferson, Franklin, and Taney counties.

**Carex oligocarpa** Schkuhr.

Rich rocky woods and ledges along bluffs. Circumneutral. Central and southern Mo.: St. Louis, Jefferson, Franklin, Iron, Wayne, Shannon, Miller, Laclede, Boone, Clay, Jackson, Taney, Stone, Jasper, Newton, and McDonald counties.

**Carex Hitchcockiana** Dewey.

Rich woods and shaded bluffs. Circumneutral. General but scattered: St. Louis, Washington, Shannon, Mercer, and Jackson counties, and also recorded from Boone Co.

**Carex amphibola** Steud.

*Carex grisea* var. *angustifolia* Boott (G).

Rich alluvial or wet woods. Circumneutral. Southeastern and central Mo.: St. Louis, Jefferson, Iron, Mississippi, Dunklin, Butler, Shannon, and Jackson counties.

**Carex grisea** Wahlenb.

Prairie swales and moist woods. Circumneutral. General.

**Carex grisea** var. *rigida* Bailey.

Occasionally found with the typical form.

***Carex grisea* var. *globosa* Bailey.**

In similar situations to the typical form. Local: Shannon Co.

***Carex glaucoidea* Tuckerm.**

Moist open ground and open woods. Circumneutral. Central and southern Mo.: St. Louis, Jefferson, Ste. Genevieve, St. Francois, Bollinger, Iron, Dunklin, Butler, Ripley, Shannon, Dent, Texas, Phelps, Boone, Douglas, and Webster counties.

***Carex flaccosperma* Dewey.**

Swampy woods. Circumneutral. Southeastern Mo., local: Dunklin Co.

***Carex gracillima* Schwein.**

Wet woods. Circumneutral. Southern and central Mo., scattered: St. Louis and Greene counties.

***Carex oxylepis* Torr. & Hook.**

Rich low woods. Circumneutral. Southeastern Mo.: Dunklin and Butler counties.

***Carex Davisi* Schwein. & Torr.**

Moist or rich woods, meadows, and borders of streams. General: Shelby, Marion, Ralls, Lincoln, St. Charles, St. Louis, Franklin, Stoddard, Shannon, Phelps, Boone, Schuyler, Scotland, Putnam, Mercer, Harrison, Gentry, Clay, Jackson, Johnson, Greene, Jasper, and Newton counties.

***Carex cherokeeensis* Schwein.**

Swampy ground. Circumneutral. Southeastern Mo.: Butler Co.

***Carex virescens* Muhl.**

Wet woods and swampy open ground. Circumneutral. Southeastern Mo.: Scott, Dunklin, Butler, and Ripley counties.

***Carex hirsutella* Mack. Bull. Torr. Bot. Club 50: 349. 1923.**

*Carex triiceps* var. *hirsuta* (Willd.) Bailey (G).

*Carex complanata* Torr. (B & B).

Dry rocky woods and prairies. Oxylophile. General.

***Carex caroliniana* Schwein.**

*Carex triiceps* var. *Smithii* Porter (G).

Wet woods and prairie swales. Circumneutral. Central and southern Mo.: St. Louis, Jefferson, St. Francois, and Jasper counties.

***Carex Bushii* Mack. Bull. Torr. Bot. Club 37: 241. 1910.**

Wet open ground. Circumneutral. Northern and western Mo.: Adair, Jackson, and Jasper counties.

***Carex leptalea* Wahlenb.**

Moist bluffs and wet open ground. Calciphile to circumneutral. Southern Mo., local: Laclede, Washington, and Shannon counties.

***Carex Joorii* Bailey.**

*Carex macrokolea* Steud. (G).

Swamps and low wet woods. Circumneutral. Southeastern Mo.: Dunklin Co.

***Carex Shortiana* Dewey.**

Swales, meadows, and borders of ponds and streams. Circumneutral. General.



**Carex Buxbaumii** Wahlenb.

Swampy ground and prairies. Circumneutral. Scattered: Marion, Butler, and Clinton counties.

**Carex stricta** Lam. Tussock Sedge.

*Carex stricta* var. *angustata* (Boott) Bailey, in part.

Swampy woods and prairies. Circumneutral. Scattered: Shannon, Jackson, Jasper, and Greene counties.

**Carex Haydeni** Dewey.

*Carex stricta* var. *decora* Bailey (G).

Prairie swales. Circumneutral. Northern and western Mo., local: Jackson and Adair counties.

**Carex scabrata** Schwein.

Wet open or rocky ground. Circumneutral. Southwestern Mo., local: Greene Co.

**Carex torta** Boott.

Swamps and banks of streams. Oxylophile to circumneutral. Southern Mo.: Washington, Ste. Genevieve, Ripley, Iron, Shannon, and Webster counties.

**Carex Emoryi** Dewey.

Wet woods and prairie swales. Circumneutral. Scattered: Jackson and Mercer counties.

**Carex crinita** Lam. Fringed Sedge.

Prairie swales, sloughs, and margins of ponds and streams. Circumneutral. General.

**Carex crinita** var. *gynandra* (Schwein.) Schwein. & Torr.

*Carex gynandra* Schwein.

Prairie swales, sloughs, and margins of ponds. Circumneutral. Scattered: Ripley and Jackson counties.

**Carex lacustris** Willd.

*Carex riparia* Curtis (G).

*Carex riparia* var. *lacustris* (Willd.) Kükenth.

Low wet woods and swamps. Circumneutral. General.

**Carex hyalinolepis** Steud.

*Carex impressa* (S. H. Wright) Mack. Bull. Torr. Bot. Club 37: 236. 1910. (B & B).

*Carex riparia* var. *impressa* S. H. Wright.

Swampy woods and borders of sloughs. Circumneutral. General.

**Carex lanuginosa** Michx.

Prairie swales and boggy ground. Circumneutral. General.

**Carex laeviconica** Dewey.

*Carex trichocarpa* var. *Deweyi* Bailey (G), in part.

*Carex trichocarpa* var. *imberbis* Gray (G), in part.

*Carex trichocarpa* Muhl. (B & B), in part.

Low wet ground. Circumneutral. Local: Schuyler and Jackson counties.

**Carex atherodes** Spreng.

*Carex trichocarpa* var. *aristata* (R. Br.) Bailey (G).

Low swampy ground. Circumneutral. Local: Jackson Co.

**Carex vesicaria** L.

Meadows and low ground. Circumneutral. Local: St. Louis Co.

**Carex vesicaria** var. *monile* (Tuckerm.) Fernald.

*Carex monile* Tuckerm.

Meadows and low ground. Circumneutral. Northern and central Mo.: Scotland, Adair, St. Louis, Saline, and Jackson counties.

**Carex lurida** Wahlenb.

*Carex lurida* var. *flaccida* Bailey, in part.

Wet woods, swales, and borders of sloughs and streams. Circumneutral. General.

**Carex comosa** Boott.

Swampy ground. Circumneutral. Central-western and southeastern Mo.: Platte, Dunklin, and Butler counties.

**Carex hystericina** Muhl.

Rich moist woods and swales. Circumneutral. Central and southern Mo.: St. Louis, Jefferson, Washington, Iron, Shannon, Texas, Ripley, Saline, Jackson, and Greene counties. This species and *Carex lurida* have been confused with *Carex Schweinitzii* which is not known to occur in Mo.

**Carex Frankii** Kunth.

Prairie swales and borders of sloughs and streams. Circumneutral. General.

**Carex squarrosa** L.

Wet woods and prairies. Circumneutral. General.

**Carex typhina** Michx.

*Carex typhinoides* Schwein. (G).

Wet woods and swamps. Circumneutral. Northern, central, and eastern Mo.: Scotland, Adair, Shelby, Audrain, St. Louis, Franklin, Phelps, Bollinger, Wayne, Butler, Ripley, Boone, Linn, Livingston, and Jackson counties.

**Carex intumescens** Rudge.

Low woods and swampy open ground. Circumneutral. Southeastern Mo.: Cape Girardeau, Dunklin, Butler, and Ripley counties.

**Carex Asa-Grayi** Bailey.

*Carex Grayii* var. *hispidula* Gray (G), in part.

Low wet woods and sloughs. Circumneutral. General.

**Carex louisianica** Bailey.

*Carex Halei* Carey, not Dewey (G).

Swamps and wet woods. Circumneutral. Southeastern Mo.: New Madrid, Dunklin, and Butler counties.

**Carex lupuliformis** Sartwell.

Swampy ground. Circumneutral. Northern and central Mo., rare and scattered: St. Louis and Livingston counties.

**Carex lupulina** Muhl. Hop Sedge.

*Carex lupulina* var. *pedunculata* Dewey (G), in part.

Wet meadows, swampy woods, and borders of sloughs. Circumneutral. General.

*Carex gigantea* Rudge.

Swampy woods and wet open ground. Circumneutral. Southeastern Mo.: Dunklin, Butler, and Ripley counties.

## Fam. ARACEAE

*Arisaema triphyllum* (L.) Schott. Indian Turnip, Jack-in-the-pulpit.

Rich or rocky woods and alluvial thickets. Circumneutral. General.

*Arisaema Dracontium* (L.) Schott. Green Dragon.

Rocky woods and thickets, in moister situations than the preceding. Circumneutral. General.

*Peltandra virginica* (L.) Kunth. Arrow Arum.

Boggy ground and borders of sloughs and ponds. Circumneutral. East-central Mo.: St. Charles, St. Louis, and Jefferson counties.

*Peltandra virginica* f. *hastifolia* Blake, Rh. 14: 105. 1912.

Wet or boggy ground. Circumneutral. Southeastern Mo.: Dunklin Co.

*Acorus Calamus* L. Sweet Flag.

Wet prairies and meadows, and borders of sloughs and ponds. Circumneutral. General.

## Fam. LEMNACEAE

*Spirodela polyrhiza* (L.) Schleid. Duckweed.

Ponds and sloughs. General but not common.

*Spirodela oligorhiza* (Kurz) Hegelm. See Bull. Torr. Bot. Club 61: 233-236. 1934.

Slow-flowing streams and sloughs. Local: Jackson Co.

*Lemna trisulca* L. Ivy-leaved Duckweed.

Stagnant pools, slow streams, and deep springs. Circumneutral. Central and southern Mo., scattered: Shannon, Oregon, and Jackson counties.

*Lemna valdiviana* Philippi. See Rh. 37: 75. 1935.

*Lemna cyclostosa* (Ell.) Chev. (B & B).

Ponds and sloughs. Circumneutral. Central and southern Mo., scattered: St. Francois, Dunklin, Oregon, and Jackson counties.

*Lemna perpusilla* Torr.

Ponds and sloughs. Central and southern Mo.: St. Louis, Dent, Boone, Saline, Jackson, Cass, and Greene counties.

*Lemna perpusilla* var. *trinervis* Aust.

Ponds. Occasionally found with the typical form. Jackson Co.

*Lemna minor* L. Little Duckweed.

Ponds, sloughs, and stagnant streams. Circumneutral. General.

*Wolffia columbiana* Karst.

Ponds and sloughs. Circumneutral. Central Mo., and perhaps more general: St. Louis, Boone, and Jackson counties.

*Wolffia papulifera* C. H. Thompson.

Sloughs, ponds, and rivers. Circumneutral. Scattered: Dunklin and Boone counties.

*Wolfiella floridana* (J. D. Sm.) C. H. Thompson.

Stagnant water. Circumneutral. Southeastern Mo.: Dunklin Co., in Varney and St. Francis rivers.

### Fam. COMMELINACEAE

*Tradescantia subaspera* Ker-Gawl. See Contr. Arn. Arb. 9: 48. 1935.

*Tradescantia pilosa* Lehm. (G), (B & B).

Rich woods, shaded bluffs, and banks of streams. Circumneutral. Eastern and middle Mo.: Marion, Monroe, Ralls, Pike, Boone, Callaway, Montgomery, Warren, St. Louis, Jefferson, Franklin, Washington, Crawford, Ripley, Oregon, Shannon, Texas, Maries, Pulaski, Osage, Miller, Moniteau, Morgan, and Ozark counties.

*Tradescantia canaliculata* Raf. See Contr. Arn. Arb. 9: 74. 1935.

*Tradescantia reflexa* Raf. (G), (B & B).

Rocky prairies, moist banks, thickets, and open woods. Circumneutral. General.

*Tradescantia virginiana* L. See Contr. Arn. Arb. 9: 60. 1935. Spiderwort.

*Tradescantia brevicaulis* Raf., not of recent auth.

Rich moist ledges along bluffs, and alluvial woods. Circumneutral to calciphile. Eastern and central Mo.: Pike, Lincoln, St. Charles, St. Louis, Jefferson, Washington, Ste. Genevieve, Iron, Madison, Wayne, Carter, Ripley, Montgomery, Boone, Clinton, and Jackson counties.

*Tradescantia bracteata* Small. See Contr. Arn. Arb. 9: 85. 1935.

Prairies, thickets, and meadows, and also often introduced along railway embankments and roadsides. Circumneutral to oxylophile. Northern and central Mo.: Scotland, Pike, Lincoln, St. Charles, St. Louis, Jefferson, Atchison, Jackson, Cass, and Henry counties.

*Tradescantia longipes* Anderson & Woodson, Contr. Arn. Arb. 9: 91. 1935.

*Tradescantia brevicaulis* of auth. in part, not Raf. (G), (B & B).

Rocky hillsides and sandy or rocky open woods. Oxylophile. Eastern Ozark region: Crawford, Washington, Madison, St. Francois, Iron, Reynolds, Wayne, Carter, Shannon, Dent, Texas, Howell, and Douglas counties.

*Tradescantia Tharpii* Anderson & Woodson, Contr. Arn. Arb. 9: 70. 1935.

*Tradescantia brevicaulis* of auth. in part, not Raf. (G), (B & B).

Rocky prairies and hillsides. Circumneutral. Southwestern Mo.: Greene, Lawrence, and Jasper counties.

*Tradescantia ozarkana* Anderson & Woodson, Contr. Arn. Arb. 9: 56. 1935.

Rich rocky woods and moist ledges along bluffs. Circumneutral to calciphile. Southwestern Mo., local: Barry Co.

*Tradescantia Ernestiana* Anderson & Woodson, Contr. Arn. Arb. 9: 58. 1935.

Rocky wooded hillsides and ledges along bluffs. Circumneutral. Southwestern Mo.: Douglas, Taney, Barry, Jasper, and Newton counties.

*Commelina communis* L. Creeping Day-flower.

Wet alluvial cultivated or waste ground, and in woods and thickets. General. Sometimes becoming a troublesome weed.

*Commelina caroliniana* Walt.

Fields and waste ground. Indifferent. Introduced in Jackson Co.

*Commelina virginica* L. See Bull. Torr. Bot. Club 43: 97-111. 1916.

*Commelina hirtella* of auth., not Vahl (G), (B & B).

Moist alluvial ground along streams, and margins of swamps and sloughs.

Central and southern Mo.: St. Louis, Jefferson, Bollinger, Scott, Mississippi, New Madrid, Pemiscot, Dunklin, Butler, Wayne, Carter, Ripley, Oregon, Shannon, Phelps, Pulaaki, Laclede, Jackson, Cedar, St. Clair, Greene, Barry, Jasper, Newton, and McDonald counties.

*Commelina erecta* L. Day-flower.

*Commelina virginica* of auth., not L. (G), (B & B).

Bluffs and hillsides, sandy and rocky woods, alluvial banks, and gravel and sand bars along Ozark streams. Oxylophile to circumneutral. General: Mercer, Linn, Warren, Montgomery, Maries, Franklin, Jefferson, Dent, Reynolds, Shannon, Oregon, Texas, Pulaski, Miller, Camden, Laclede, Dallas, Morgan, Hickory, Polk, Cedar, Douglas, Ozark, Andrew, Jackson, Vernon, Jasper, Barry, and McDonald counties.

*Commelina erecta* var. *crispa* (Wooton) Palmer & Steyermark, comb. nov.

*Commelina crispa* Wooton (B & B).

Exposed rocky ledges and glades. Circumneutral to calciphile. General but scattered: Putnam, Mississippi, Ripley, Jackson, Jasper, and McDonald counties.

*Commelina longicaulis* Jacq. See Bull. Torr. Bot. Club. 43: 96. 1916.

*Commelina nudiflora* of Am. auth., not L. (B & B).

Moist open or cultivated ground, in sandy or alluvial soil, frequently a weed in low fields. Circumneutral. General: Shelby, Lincoln, Randolph, Saline, St. Charles, St. Louis, Jefferson, Madison, Scott, New Madrid, Pemiscot, Dunklin, Ripley, Oregon, Howell, Shannon, Miller, Henry, Pettis, Douglas, Barry, Vernon, and Jasper counties.

## Fam. XYRIDACEAE

*Xyris flexuosa* Muhl.

Moist borders of streams and ponds. Circumneutral. Local: Greene Co.

## Fam. PONTEDERIACEAE

*Eichhornia crassipes* (Mart.) Schlecht. Water Hyacinth.

Introduced along drainage canals. Butler Co.

*Pontederia cordata* L. Pickerel-weed.

Ponds and sloughs. Circumneutral. Central and southern Mo.: Lincoln, St. Charles, Jefferson, Crawford, Stoddard, Ray, Jackson, Barton, Jasper, and Newton counties.

*Heteranthera limosa* (Sw.) Willd.

Slow streams, ponds, and sloughs. Circumneutral. Central and southern Mo.: Montgomery, St. Louis, Jefferson, New Madrid, Dent, Ray, Jackson, Greene, Ozark, Taney, Jasper, and McDonald counties.

**Heteranthera reniformis** R. & P. Mud Plantain.

Ponds and sloughs. Circumneutral. General but scattered, and mainly along the larger rivers: Lincoln, St. Charles, St. Louis, Jefferson, Dunklin, Shannon, Boone, Holt, Clay, Jackson, and Greene counties.

**Heteranthera dubia** (Jacq.) MacM. Water Star-grass.

Streams and sloughs. Circumneutral. Central, southern, and northwestern Mo., mainly in the Ozark region, and scattered elsewhere: St. Louis, Jefferson, Franklin, Gasconade, Crawford, Dent, Reynolds, Wayne, Butler, Dunklin, Ripley, Oregon, Carter, Texas, Pulaski, Osage, Miller, Camden, Dallas, Laclede, Douglas, Ozark, Taney, Stone, Greene, Holt, and Jackson counties.

## Fam. JUNCACEAE

**Juncus bufonius** L. Toad Rush.

Sandy and gravelly ground along the larger rivers. Oxylophile. West-central Mo.: Clay and Jackson counties.

**Juncus macer** S. F. Gray. See Jour. Bot. 68: 366. 1930. Slender Rush.

*Juncus tenuis* of auth., not Willd. (G), (B & B).

*Juncus monostichus* Bartlett (G).

Fields, roadsides, waste ground, and wet places. Indifferent. General and common. True *Juncus tenuis* Willd. (*Juncus dichotomus* Ell. and auth.) has been misidentified in Missouri and is not known from the state. *Juncus monostichus* is considered only an abnormal form of *Juncus macer* and is treated here as identical with the latter species.

**Juncus macer** var. *anthelatus* (Wiegand) Fernald, Jour. Bot. 68: 367. 1930.

*Juncus tenuis* var. *anthelatus* Wiegand (G).

Occasionally found with the typical form. Scotland, Shelby, Boone, Scott, Wayne, Ripley, Mercer, Saline, and Jasper counties.

**Juncus interior** Wiegand.

Upland prairies and meadows. Circumneutral to oxylophile. General.

**Juncus kansanus** Hermann, Papers Mich. Acad. Sci. 20: 41. 1935.

Dry rocky open ground. Circumneutral. Northeastern Mo., local: Pike Co.

**Juncus secundus** Beauv.

Dry upland prairies, sandy or rocky ground. Oxylophile. Eastern and southern Mo.: Lincoln, Jefferson, St. Francois, Dent, Phelps, Texas, and Laclede counties.

**Juncus Dudleyi** Wiegand.

Moist prairies, meadows, and wet places along streams. Circumneutral. Central and southern Mo.: Crawford, Iron, Shannon, Phelps, Dallas, and Jackson counties.

**Juncus effusus** L. var. *solutus* Fernald & Wiegand, Rh. 12: 90. 1910. Rush.

Prairie swales and borders of ponds, sloughs, and streams. Circumneutral. General.

**Juncus balticus** Willd. var. *littoralis* Engelm.

Sand bars and alluvial ground along Missouri River. Circumneutral. Local: Jackson Co.



***Juncus canadensis* J. Gay.**

Moist ground along streams. Southern Mo., local: Howell Co.

***Juncus subcaudatus* (Engelm.) Coville & Blake, Proc. Biol. Soc. Wash. 31: 45. 1918.**

*Juncus canadensis* var. *subcaudatus* Engelm. (G).

Moist ground along rocky beds of streams and slopes. Calciphile. Southeastern Mo.: Texas and Iron counties.

***Juncus nodosus* L. Knotted Rush.**

Sand bars of Missouri River. Introduced in Jackson Co.

***Juncus Torreyi* Coville.**

Borders of ponds, sloughs, and eroded banks. Circumneutral. General. Small-headed forms of this have been confused with *J. nodosus*.

***Juncus brachycarpus* Engelm.**

Prairies, swales, wet meadows, and wet sandy borders of small streams. Circumneutral to oxylophile. Southern and central Mo.: Boone, St. Louis, Jefferson, Crawford, Iron, Scott, Mississippi, Wayne, Shannon, Phelps, Howell, Ozark, Webster, Greene, Vernon, Jasper, McDonald, and Barry counties.

***Juncus validus* Coville.**

*Juncus polycephalus* of auth. in part, not Michx. (G), (B & B).

Prairie swales and swampy ground. Oxylophile to circumneutral. Southwestern Mo.: Jasper and Vernon counties. This species has been confused with *Juncus polycephalus* which is not known in Mo.

***Juncus scirpoides* Lam.**

Wet open or swampy ground. Circumneutral. Central and southern Mo.: St. Louis, Mississippi, Wayne, Howell, and Greene counties.

***Juncus acuminatus* Michx. Knotty-leaved Rush.**

Borders of ponds, sloughs, and ditches. Circumneutral. General.

***Juncus alpinus* Vill. var. *fuscescens* Fernald.**

Low sandy ground along Missouri River. Circumneutral. Western Mo., local: Jackson Co.

***Juncus diffusissimus* Buckley.**

Wet meadows, bogs, and borders of ponds, streams, and sloughs. Circumneutral to oxylophile. Central and southern Mo.: Miller, Crawford, Shannon, Ripley, Howell, Benton, Henry, Cedar, Vernon, Barton, Jasper, and McDonald counties.

***Juncus nodatus* Coville.**

*Juncus robustus* (Engelm.) Coville, not Wats. (G).

Sandy open ground, borders of streams and sloughs. Oxylophile. Southern and east-central Mo.: St. Louis, Bollinger, Wayne, Butler, Howell, Barton, and Jasper counties.

***Juncus marginatus* Rostk. See Rh. 37: 156. 1935.**

*Juncus aristulatus* Michx.

Prairies, meadows, and open sandy ground. Circumneutral to oxylophile. Eastern, central, and southern Mo.: Clark, Marion, Audrain, Boone, St. Louis, Jefferson, St. Francois, Mississippi, Dunklin, Wayne, Iron, Carter, Butler,

Ripley, Crawford, Phelps, Shannon, Howell, Henry, Cedar, Greene, Vernon, Barton, Jasper, Newton, McDonald, and Barry counties.

***Juncus marginatus* var. *setosus* Coville.**

Occasionally found with the typical form. Southern Mo.: Shannon, Greene, Jasper, and Newton counties.

***Juncus biflorus* Ell. See Rh. 37: 156. 1935.**

*Juncus aristulatus* of Bicknell and later auth., not Michx. (G).

Moist sandy open ground. Oxylophile. Southern and east-central Mo.: St. Louis, Butler, Iron, Wayne, Phelps, Texas, Greene, Jasper, Barry, and McDonald counties.

***Juncus biflorus* f. *adinus* Fernald & Griseom, Rh. 37: 157. 1935.**

Wet meadows and swampy ground. Oxylophile. Scattered: St. Louis and Jasper counties.

***Luzula campestris* (L.) DC. var. *bulbosa* A. Wood.**

Dry rocky prairies, meadows, glades, and dry open woods, sometimes in sandy alluvial ground. Oxylophile. Central and southern Mo. south and east of a line drawn from St. Louis, Warren, Montgomery, and Callaway counties to Henry and Vernon counties.

### Fam. LILIACEAE

***Amianthium muscaetoxicum* (Walt.) Gray. Fly Poison.**

*Chrosperma muscaetoxicum* (Walt.) Kuntze (B & B).

Sandy woods. Oxylophile. Southern Mo., rare and scattered: Carter, Ripley, and Greene counties.

***Stenanthium gramineum* (Ker) Kunth.**

Moist meadows and rich woods along bluffs. Circumneutral. Eastern and middle Mo.: St. Louis, Jefferson, St. Francois, Madison, Ripley, Shannon, and Phelps counties.

***Stenanthium gramineum* f. *robustum* (Wats.) Palmer & Steyermark, comb. nov.**

*Stenanthium robustum* Wats. (G), (B & B).

Moist rocky woods and thickets. Circumneutral. East-central and southern Mo., scattered: St. Louis, Lawrence, and Jasper counties.

***Zigadenus elegans* Pursh. See Rh. 37: 256-257. 1935.**

Moist shaded limestone bluffs. Calciphile. Local: Shannon Co. This species has been confused with *Zigadenus glaucus* Nutt. (*Z. chloranthus* Richards.), which is not known to occur in Mo.

***Zigadenus Nuttallii* (Gray) Wats.**

*Toxicoscordion Nuttallii* (Gray) Rydb. (B & B).

Dry rocky limestone slopes and glades. Calciphile. Local: Oregon Co.

***Melanthium virginicum* L. Bunch-flower.**

Wet meadows, thickets, and marshy ground below bluffs. Circumneutral. General but scattered: Linn, Adair, Knox, Pike, St. Louis, Jefferson, Franklin, Washington, Phelps, Iron, Shannon, Boone, Webster, Greene, Jackson, Cass, Johnson, and Jasper counties.

***Veratrum Woodii* Robbins.** False Hellebore.

Rich or rocky woods. Circumneutral. Eastern, middle, and southern Mo.: Mercer, Sullivan, Adair, Schuyler, Knox, Shelby, Marion, Ralls, Boone, Callaway, Lincoln, Warren, St. Louis, Jefferson, Franklin, St. Francois, Madison, Bollinger, Iron, Crawford, Dent, Shannon, Reynolds, Oregon, Texas, Howell, Taney, Wright, and Barry counties.

***Uvularia grandiflora* Sm.** Straw-flower, Large Bellwort.

Rich alluvial or rocky woods. Circumneutral. General but absent from most of the western prairie counties. This species has sometimes been confused with *U. perfoliata*, which is not known in Mo.

***Oakesia sessilifolia* (L.) Wats.** Small Bellwort, Wild Oats.

Rich alluvial or low woods, and along shaded banks and bluffs. Circumneutral. Scattered, and mostly in northern Mo.: Harrison, Boone, Knox, Audrain, and Jasper counties.

***Allium cernuum* Roth.** Nodding Wild Onion.

Rocky ledges along bluffs. Calciphile. East-central and southern Mo.: Jefferson, Franklin, Washington, Crawford, Dent, Phelps, Pulaski, Shannon, and Greene counties.

***Allium stellatum* Ker.**

Glades and exposed rocky ledges along bluffs. Calciphile. Central and southern Mo.: Lincoln, St. Louis, Jefferson, Franklin, Ste. Genevieve, St. Francois, Madison, Washington, Crawford, Phelps, Maries, Pulaski, Dent, Shannon, Texas, Laclede, Boone, Henry, Benton, Dallas, Greene, Wright, Webster, Douglas, Ozark, Taney, and Barry counties.

***Allium canadense* L.** Wild Garlic.

Moist open woods, meadows, prairies, and thickets. Indifferent. General.

***Allium Nuttallii* Wats.**

Glades and dry rocky ledges. Calciphile. Southwestern Mo., local: McDonald Co.

***Allium mutabile* Michx.** Wild Onion.

Limestone glades, barrens, and prairies. Calciphile. General but mostly in central and southern Mo.: Montgomery, Jefferson, St. Francois, Madison, Iron, Dent, Maries, Laclede, Ozark, Wright, Webster, Greene, Boone, Daviess, Jackson, Vernon, Jasper, Newton, and McDonald counties.

***Allium sativum* L.**

Fields, waste ground, and along railroads and roadsides. Indifferent. General.

***Allium vineale* L.** Crow Garlic.

Moist fields and meadows. Indifferent. Scattered: St. Louis, Franklin, Boone, and Jasper counties.

***Allium tricoccum* Ait.** Wild Leek.

Low rich woods and slopes along bluffs. Circumneutral. Northern and central Mo., scattered and rare: Mercer, Boone, and St. Louis counties.

***Nothoscordum bivalve* (L.) Britton.** False Garlic.

Glades, barrens, and prairies. Circumneutral. General but commonest in the Ozark region.

**HEMEROCALLIS FULVA** L. Day Lily.

Escaped from gardens to fields and roadsides. Indifferent. General.

**LILIUM TIGRINUM** Ker. Tiger Lily.

Occasionally found as an escape from cultivation.

**Lilium michiganense** Farwell, Bull. Torr. Bot. Club 42: 353. 1915. Turk's-cap Lily.

*Lilium superbum* of auth., not L. (G), (B & B).

Rich open woods, prairie swales, and meadows. Circumneutral. General but not common: Knox, Adair, Livingston, Chariton, Mercer, Boone, Callaway, St. Louis, Jefferson, Franklin, Washington, Crawford, Dent, Iron, Saline, Jackson, Johnson, Benton, Webster, Greene, Jasper, and Newton counties.

**Erythronium americanum** Ker. Yellow Adder's-tongue, Yellow Dog-tooth Violet.

Rich alluvial woods along bluffs and streams. Circumneutral. Southern and east-central Mo.: Boone, St. Louis, Franklin, Ste. Genevieve, Iron, Shannon, Howell, Taney, Greene, Barry, Jasper, and McDonald counties.

**Erythronium albidum** Nutt. White Adder's-tongue, White Dog-tooth Violet.

Rich woods along bluffs and streams. Circumneutral. General.

**Erythronium mesochoreum** Knerr. Prairie Dog-tooth Violet.

Rocky prairies, glades, and dry open woods. Circumneutral to calciphile. Central and southern Mo.

**Camassia hyacinthina** (Raf.) Palmer & Steyermark, comb. nov. Wild hyacinth.

*Lemotris hyacinthina* Raf.

*Camassia esculenta* (Ker) Robinson, not Lindl. (G), (B & B).

Rocky glades and prairies. Calciphile to circumneutral. General.

**SCILLA BIFLORA** L.

Occasionally escaped from cultivation; in open woods and fields. Pike Co.

**MUSCARI BOTRYOIDES** (L.) Mill. Grape Hyacinth.

Escaped from cultivation; in fields and waste ground. Scattered: Jefferson and Taney counties.

**Yucca glauca** Nutt. Bear Grass.

Loess hills. Calciphile. Northwestern Mo.: Atchison and Holt counties.

**Yucca arkansana** Trelease.

Rocky open woods and bluffs. Circumneutral. Southwestern Mo.: Stone Co.

**Yucca filamentosa** L. Needle-and-thread, Spanish Bayonet.

Frequently escaped from cultivation; in open woods, thickets, and along railroads and roadsides. General but scattered.

**ORNITHOGALUM NUTANS** L. Star of Bethlehem.

Occasionally escaped from gardens to fields and lawns. Boone Co.

**ORNITHOGALUM UMBELLATUM** L. Star of Bethlehem.

Escaped from cultivation; in fields, meadows, and on shaded banks. Scattered: Marion, St. Louis, Jefferson, Perry, Callaway, Boone, Cole, Jackson, and Vernon counties.

**ASPARAGUS OFFICINALIS L.** Asparagus.

Frequently escaped from cultivation; along roads and in fields and waste ground. General.

**Smilacina racemosa (L.) Desf.** False Spikenard, False Solomon's Seal.

Rich or rocky woods. Circumneutral. General.

**Smilacina stellata (L.) Desf.** False Solomon's Seal.

Moist rich woods. Circumneutral. Northern and central Mo., scattered: Shelby, Boone, and Jackson counties.

**Medeola virginiana L.** Indian Cucumber-root.

Moist shaded banks along streams. Circumneutral. Northern Mo., local: Linn Co.

**Polygonatum canaliculatum (Muhl.) Pursh.** Large Solomon's Seal.

*Polygonatum giganteum* Dietr., in part (R).

*Polygonatum commutatum* (R. & S.) Dietr., in part (G), (B & B).

Rich or rocky woods and alluvial thickets and banks. Circumneutral. General.

**Polygonatum canaliculatum var. ovatum (Farwell) Palmer & Steyermark, comb. nov.**

*Polygonatum biflorum ovatum* Farwell, Bull. Torr. Bot. Club 42: 255. 1915.

*Polygonatum commutatum ovatum* (Farwell) Gates.

*Polygonatum ovatum* (Farwell) Bush.

Rich woods and thickets. Circumneutral. Western Mo.: Jackson Co.

**Trillium sessile L.** Wake-Robin.

Rich alluvial or rocky woods. Circumneutral. Central and southern Mo.: St. Louis, Jefferson, Franklin, Shannon, Dent, Iron, Wayne, Oregon, Warren, Montgomery, Callaway, Audrain, Randolph, Gasconade, Osage, Moniteau, Boone, Cole, Phelps, Pulaski, Laclede, Texas, Howell, Morgan, Cooper, Chariton, Jackson, Johnson, Bates, Benton, Hickory, Polk, St. Clair, Greene, Christian, Taney, Douglas, Wright, Webster, Barry, Jasper, Newton, and McDonald counties.

**Trillium sessile f. luteum Peattie.**

*Trillium sessile viridiflorum* Beyer.

Occasionally found with the typical form: St. Louis and Moniteau counties.

**Trillium viride Beck.**

Open rocky woods and banks. Circumneutral. Eastern Mo.: Pike, Callaway, Warren, St. Louis, Franklin, and Iron counties.

**Trillium viridescens Nutt.**

Rocky or alluvial open woods. Circumneutral. Southwestern Mo.: Ozark, Taney, Stone, and Barry counties.

**Trillium recurvatum Beck.**

Rich alluvial woods and thickets and rocky slopes or base of bluffs. Circumneutral to calciphile. Eastern and central Mo., and locally southwestwards to Douglas Co.: St. Louis, Jefferson, Franklin, Washington, St. Francois, Ste. Genevieve, Perry, Cape Girardeau, Bollinger, Dunklin, Butler, Ripley, Wayne, Iron, Carter, Oregon, Boone, Howard, Cooper, Saline, Howell, and Douglas counties.

***Trillium recurvatum* f. *Shay* Palmer & Steyermark, nom. nov.**

*Trillium recurvatum* f. *luteum* Friesner, Butler Univ. Bot. Stud. 3: 31. 1929, not *Trillium recurvatum* f. *luteum* Clute, Am. Bot. 28: 79. 1922.

Rich woods. Circumneutral. East-central Mo., local: St. Louis Co.

A typo differt petalis staminibusque luteis vel viridi-luteis.

This form appears identical with that described by Friesner. The *Trillium recurvatum* forma *luteum* described by Clute has the claws, the petals, and the stamens brownish-red, and therefore cannot be considered the same as the yellow-flowered form in Missouri in which the petals, including the claws, are throughout yellow or greenish-yellow as are the stamens.

This form is dedicated to Mr. W. F. Shay, Head of the Biology Department at Normandy High School, Missouri, who first called attention to it.

Collected at Monarch Hill, near Monarch, St. Louis Co., Mo., April 29, 1935, by W. F. Shay (Mo. Bot. Gard.).

***Trillium Gleasoni* Fernald, Rh. 34: 21-22. 1932.**

*Trillium declinatum* (Gray) Gleason, not Raf. (G), (B & B).

Rich rocky or alluvial woods. Circumneutral. Eastern and middle Mo.: Ralls, Boone, Callaway, Warren, St. Charles, St. Louis, Jefferson, Franklin, St. Francois, Perry, Scott, and Wayne counties.

***Trillium ozarkanum* Palmer & Steyermark, sp. nov.**

Rocky or alluvial ground. Circumneutral to oxylophile. Southwestern Mo., local: Barry Co.

Planta rhizomate crasso elongato fere horizontale; caule purpureo vel interdum in parte superiore viridi, 1-3 dm. alto; foliis lanceolatis elliptico-oblongis vel oblongo-ovatis, firme membranaceis, apice obtusis basi late cuneatis vel subito in petiolum brevissimum contractis, 4-8.5 cm. longis, 1-2.5 cm. latis, manifeste quinque-nerviis; pedunculo erecto, 1.5-3 cm. longo; sepalis oblongo-linearibus vel oblongo-ovatis, 1.5-4 cm. longis, 0.5-1.6 cm. latis, quinque-nerviis (vel raro tri-nerviis), petalis plerumque longioribus; petalis oblongo-lanceolatis vel anguste ovatis, intus candidis ad roseis vel rubro-purpureis, extus plerumque magis coloratis vel interdum utrinque intense roseo-purpureis; filamentis 2.5-5 mm. longis; antheris oblongo-linearibus, 4.5-9 mm. longis; stigmatibus basi connatis apice reflexis; fructu ovoideo vel subglobozo, 0.8-1 cm. longo, 0.7-0.8 cm. lato.

Rootstock thickened and elongated; stems 1-3 dm. tall, dark purple below and sometimes green in upper portion; leaves forest-green to grass-green, firmly membranaceous, dull above, lustrous beneath, lanceolate or oblong-elliptic to oblong-ovate, obtuse at apex, broadly cuneate at base, subsessile or abruptly contracted into very short petiolules, 4-8.5 (rarely 3.5) cm. long, 1-2.5 cm. broad; peduncle erect, 1.5-3 cm. long; sepals spreading, conspicuously veined with 5 (rarely 3) principal veins, linear-oblong to broadly oblong-ovate, obtuse or rounded at apex, 1.5-4 cm. long, 0.5-1.6 cm. broad, usually exceeding the petals; petals varying from pure white to pinkish or rose-purple within, usually more deeply colored without, or sometimes rich rose-purple on both sides, spreading or slightly recurved at tips, oblong-lanceolate to ovate, broadest near the base, obtuse to acute at apex, 1.6-3.4 cm. long, 0.5-1.8 cm. broad; stamens in



anthesis equalling or somewhat exceeding the stigmas, the filaments short, 2.5–5 mm. long, anthers straight, 4.5–9 mm. long; stigmas united at base, spreading and recurved at apex; ovary white or pale green; fruit ovoid to subglobose, 0.8–1 cm. long, 0.7–0.8 cm. broad.

Distribution: Cherty soil of low wooded slopes and along small draws in upland oak woods; western Ozark region, northwestern Arkansas, and southwestern Missouri.

This new species adds another to the numerous endemics of the Ozark region, several of which are confined to the northwestern portion. While closely related to *Trillium pusillum* Michx., of the Atlantic Coastal Plain, and to *Trillium texanum* Buckley, of eastern Texas, *Trillium ozarkanum* has several characters that mark it as distinct from either of these species. The leaves and sepals average much broader and have normally five instead of three principal veins, which stand out more prominently; the petals are also much longer and broader on the average, and the peduncles are distinctly longer. The habitat, in comparatively dry cherty soil on wooded slopes of deciduous upland woods, is quite different from that of the other two related species.

MISSOURI: in cherty soil along slopes of a draw in upland oak-chinquapin woods, 3 mi. south of Cassville, Barry Co., April 20, 1935, *J. A. Steyermark 18628* (Mo. Bot. Gard. Herb. TYPE); 5 mi. s. of Cassville, April 13, 1930, *C. Shoop*, (Shoop Herb. and Univ. Mo. Herb.); ARKANSAS: in woods, dry rocky chert soil, Boone Co., March 28, 1921, *J. T. Buchholz* (Mo. Bot. Gard. Herb. and Univ. Ark. Herb.); wooded slope in chert hills southwest of Elm Springs, Washington Co., June 1, 1923, *J. T. Buchholz* (Mo. Bot. Gard. Herb. and Univ. Ark. Herb.); in Boone chert, flinty limestone soil, Osage, April 20, May 10, 1922, *J. T. Buchholz* (Gray Herb.); Withrow Springs, Madison Co., April 15, 1928, *Moore & Demaree 4803* (Mo. Bot. Gard. Herb.); same locality, May 10, 1924, *E. J. Palmer 24801* (Palmer Herb.).

*Trillium nivale* Riddell. Snowy Wake-Robin.

Rich and rocky woods along streams and moist shaded ledges. Circumneutral. Southern and central Mo.: Callaway and Texas counties. Rare and local.

*Smilax herbacea* L. Carrion-flower.

Rich alluvial woods and thickets. Circumneutral. General.

*Smilax herbacea* var. *pulverulenta* (Michx.) Gray.

Rich or rocky woods and thickets. Circumneutral. General, but scattered: Adair, Ralls, Pike, Jefferson, Shannon, Texas, Boone, Jackson, Greene, Lawrence, and Jasper counties.

*Smilax herbacea* var. *lasioneuron* (Hook.) A. DC.

Occasionally found with the typical form. Circumneutral. General but scattered: St. Louis, Jefferson, Shannon, Wright, Adair, Mercer, Jackson, Cass, Greene, and Jasper counties.

*Smilax ecirrhata* (Engelm.) Wats.

Rocky woods. Circumneutral. General but not common: Harrison, Gentry, Putnam, Schuyler, Clark, Macon, Shelby, St. Louis, Jefferson, Franklin, Phelps, Miller, Morgan, Boone, and Jasper counties.

***Smilax rotundifolia* L. var. *quadrangularis* (Muhl.) Wood. Cat-brier.**

Moist alluvial grounds, woods, and thickets. Circumneutral to oxylophile. Southeastern Mo.: Madison, Bollinger, Mississippi, New Madrid, Dunklin, Butler, Ripley, and Oregon counties. Forms of *S. hispida* and *S. Bona-nox* have often been confused with this. The typical var. is probably not found in Mo.

***Smilax hispida* Muhl. Bristly Green-brier.**

Woods, thickets, and banks of streams. Circumneutral. General.

***Smilax Bona-nox* L. Stretch-berry, Green-brier.**

Rocky open woods, thickets, and fields. Oxylophile to circumneutral. Southern and east-central Mo.: St. Louis, Jefferson, Perry, Cape Girardeau, Mississippi, New Madrid, Madison, Bollinger, Iron, Wayne, Butler, Dunklin, Ripley, Oregon, Howell, Carter, Shannon, Reynolds, Dent, Phelps, Texas, Douglas, Wright, Webster, Ozark, Taney, Stone, Barry, Jasper, Newton, and McDonald counties.

***Smilax glauca* Walt. var. *genuina* Blake, Rh. 20: 79. 1918.**

Rocky open woods and wet open ground. Oxylophile. Southeastern Mo.: Madison, Carter, and Dunklin counties. Less common than the next following.

***Smilax glauca* var. *leurophylla* Blake, Rh. 20: 80. 1918.**

Rocky open woods, fields, and wet open ground. Oxylophile. Southeastern Mo.: Ste. Genevieve, St. Francois, Cape Girardeau, Bollinger, Madison, Iron, Wayne, Carter, Stoddard, Scott, Mississippi, New Madrid, Dunklin, Butler, Ripley, and Oregon counties.

**Fam. DIOSCOREACEAE*****Dioscorea quaternata* (Walt.) Gmel. See Rh. 36: 345. 1934.*****Dioscorea glauca* Muhl. (S).**

Rich woods and thickets, rocky ground at base of bluffs, and talus slopes. Circumneutral. Southern Mo.: Jefferson, Madison, Bollinger, Ste. Genevieve, Wayne, Carter, Iron, Shannon, Crawford, Ripley, Oregon, Texas, Taney, and Ozark counties.

***Dioscorea villosa* L. See Rh. 20: 48. 1918. Wild Yam.**

Rich rocky woods and thickets. Circumneutral. General.

***Dioscorea villosa* var. *glabrifolia* (Bartlett) Blake, Rh. 20: 49. 1918.**

Occasionally found with the typical form. Scattered: Perry, Davies, Macon, Boone, Jackson, Cass, Henry, Jasper, Newton, McDonald, and Stone counties.

**Fam. AMARYLLIDACEAE*****Narcissus poeticus* L. Poet's Narcissus.**

Occasionally escaped from gardens into abandoned fields, meadows, and waste places.

***Hymenocallis occidentalis* (LeConte) Kunth. Spider-lily.**

Swamps and low wet woods. Circumneutral. Southeastern Mo.: Pemiscot, Dunklin, Butler, and Ripley counties.

***Agave virginica* L. False Aloe.**

Rocky open woods and glades. Calciphile. Southern and east-central Mo.,

south of a line drawn from St. Louis to the southwestern corner of the state: St. Louis, Jefferson, Franklin, Ste. Genevieve, Perry, Washington, Madison, Bollinger, Dunklin, Ripley, Carter, Oregon, Dent, Howell, Shannon, Texas, Pulaski, Douglas, Ozark, Taney, Stone, Wright, Greene, Barry, and McDonald counties.

*Agave virginica* f. *tigrina* (Engelm.) Palmer & Steyermark, comb. nov.

*Agave virginica* var. *tigrina* Engelm. Trans. Acad. Sci. St. Louis 3: 302. 1876. Occasionally occurring with the species in Missouri.

*Hypoxis hirsuta* (L.) Coville. Yellow Star-grass.

Dry open woods, thickets, glades, and rocky prairies. Oxylophile. General.

*Hypoxis hirsuta* var. *leptocarpa* (Engelm. & Gray) Brackett. Rh. 25: 127. 1923

Moist sandy ground. Oxylophile. Local: Ste. Genevieve Co.

### Fam. IRIDACEAE

*Iris virginica* L. Wild Blue Flag.

*Iris Shrevei* Small (S).

*Iris caroliniana* Wats. (G), in part.

*Iris versicolor* of auth., not L. (G), (B & B), in part.

Swamps and borders of ponds and sloughs. Circumneutral. General.

*Iris fulva* Ker. Red Iris.

Swampy woods, and borders of sloughs and bayous. Circumneutral. Southeastern Mo.: Perry, Scott, Dunklin, Butler, and Ripley counties.

*Iris foliosa* Mack. & Bush.

Sloughs, wet meadows, and borders of low woods. Circumneutral. Central Mo., along the larger rivers: Marion, St. Louis, Jefferson, Washington, Boone, and Jackson counties.

*IRIS PSEUDACORUS* L. Yellow Flag.

Cultivated in old gardens and occasionally escaped to fields and roadsides.

*IRIS PALLIDA* Lam. Blue Flag, Fleur-de-lis.

Cultivated and escaping to roadsides and waste ground.

*Iris cristata* Ait. Dwarf Wild Iris.

Rocky woods, sandy banks and ledges along bluffs. Oxylophile to circumneutral. Usually growing on sandstone, chert, or granitic rocks, rarely on limestone. Southeastern Mo.: Reynolds, Wayne, Carter, Ripley, Shannon, and Oregon counties.

*IRIS PUMILA* L.

Escaped from cultivation. Fields, meadows, and wet glades. Scattered: Washington and Boone counties.

*Nemastylis acuta* (Bart.) Herb.

Limestone glades and rocky prairies. Calciphile. Central and southern Mo., scattered and rare: Franklin, Washington, Ste. Genevieve, Iron, Wright, Taney, and Cass counties.

*BELAMCANDA CHINENSIS* (L.) DC. Blackberry Lily.

Cultivated in old gardens, and escaped and well established in thickets, glades, and rocky open woods. Circumneutral. General.

***Sisyrinchium albidum* Raf.**

Meadows and open woods. Circumneutral. Eastern and middle Mo.: Randolph, St. Louis, Jefferson, Franklin, Washington, Ste. Genevieve, and Iron counties. This and other species of *Sisyrinchium* have sometimes been confused with *S. angustifolium* which is not known in Mo.

***Sisyrinchium flaviflorum* Bicknell.**

Post-oak woods. Oxylophile. Western Mo., local: Jackson Co.

***Sisyrinchium campestre* Bicknell. Blue-eyed Grass.**

Prairies, meadows, glades, and open rocky woods. Circumneutral. General.

***Sisyrinchium campestre* var. *kansanum* Bicknell.**

Rocky prairies, glades, and open woods. Circumneutral. Southwestern Mo.: Jasper, Newton, and Barry counties.

***Sisyrinchium graminoides* Bicknell.**

*Sisyrinchium gramineum* Curtis, not Lam. (G).

Rocky open woods, meadows, and prairies. Circumneutral. General.

**Fam. MARANTACEAE*****Thalia dealbata* Roscoe.**

Swamps. Circumneutral. Southeastern Mo., local: Butler Co.

**Fam. ORCHIDACEAE*****Cypripedium parviflorum* Salisb. Yellow Lady's Slipper.**

Rich rocky ground, and moist shaded hillsides. Circumneutral. General but scattered and commonest in the western half of the state: Boone, Callaway, Crawford, Phelps, Shannon, Nodaway, Grundy, Saline, Jackson, Johnson, Greene, Stone, Lawrence, Jasper, Newton, and McDonald counties.

***Cypripedium parviflorum* var. *pubescens* (Willd.) Knight. Large Yellow Lady's Slipper.**

Moist alluvial banks and rich rocky woods. Circumneutral. General but scattered and commonest in eastern and northern Mo.: Warren, Pike, St. Louis, Jefferson, Franklin, Washington, Crawford, Dent, Wayne, Carter, Ripley, Schuyler, Adair, Putnam, Mercer, Harrison, Jackson, and Greene counties.

***Cypripedium candidum* Muhl. Small White Lady's Slipper.**

Rich rocky woods at the base of bluffs. Circumneutral. Scattered and rare: St. Louis, Shannon, Atchison, and Andrew counties.

***Cypripedium Reginae* Walt. Showy Lady's Slipper.**

*Cypripedium hirsutum* of some Am. auth., not Mill. (G).

Rich rocky or moist woods and bluffs. Calciphile to circumneutral. Scattered: Putnam, Iron, Shannon, Texas, and Ozark counties.

***Orchis spectabilis* L. Showy Orchis.**

Rich moist woods. Circumneutral. General but uncommon: St. Louis, Jefferson, Franklin, Bollinger, Iron, Reynolds, Dunklin, Schuyler, Adair, Sullivan, Warren, Boone, Ray, Clay, Platte, Jackson, Greene, and Taney counties.

*Habenaria flava* (L.) Gray var. *virescens* (Muhl.) Fernald. See Rh. 23: 148.  
1921. Yellow Orchis.

Wet woods, borders of swamps and bogs. Circumneutral to oxylophile. General but scattered and mostly in eastern and northern Mo.: Schuyler, Livingston, St. Louis, Jefferson, Iron, Butler, Dunklin, Shannon, and Howell counties.

*Habenaria clavellata* (Michx.) Spreng. Green Wood Orchis.

Borders of swamps and bayous. Oxylophile. Southeastern Mo., local: Dunklin Co.

*Habenaria ciliaris* (L.) R. Br. Yellow Fringed Orchis.

Pine woods and moist wooded slopes. Oxylophile. Southeastern Mo.: Iron and Ripley counties.

*Habenaria lacera* (Michx.) R. Br. Ragged Orchis.

Moist meadows and prairies. Circumneutral. Scattered: Audrain, Boone, Callaway, St. Louis, and Shannon counties, and also reported from Greene Co.

*Habenaria peramoena* Gray. Purple Fringed Orchis.

Low borders of lakes, wet rocky ground about springs, and low rich woods along streams. Oxylophile. Southeastern Mo.: Iron, Carter, Bollinger, Ripley, Butler, and Dunklin counties.

*Habenaria leucophaea* (Nutt.) Gray. White-flowered Prairie Orchis.

Prairies and meadows. Circumneutral. Scattered: Ralls, St. Louis, Jefferson, Madison, Clinton, Jackson, Vernon, and Greene counties.

*Pogonia trianthophora* (Sw.) BSP. Nodding Log Orchis.

Rich low woods. Circumneutral. Central and southern Mo.: Boone, St. Louis, Jefferson, Franklin, Bollinger, Mississippi, Dunklin, Butler, Shannon, Jackson, and Jasper counties.

*Isotria affinis* (Aust.) Rydb.

*Pogonia affinis* Aust. (G).

Wooded limestone hills. Calciphile. Southeastern Mo., local: Bollinger Co.

*Calopogon pulchellus* (Sw.) R. Br. Grass Pink.

Moist rich woods. Circumneutral. Scattered and rare: Shannon and Greene counties.

*Epipactis latifolia* (L.) All. Helleborine.

*Serapias Helleborine* of auth., not L. (G), (B & B).

Wet gravelly soil at base of bluff. Oxylophile. Southwestern Mo., local: Jasper Co.

*Spiranthes Beckii* Lindl. Little Ladies' Tresses.

Prairies, open rocky woods, and dry meadows. Oxylophile to circumneutral. East-central and southern Mo.: St. Louis, Ste. Genevieve, Scott, Franklin, Gasconade, Crawford, Dent, Shannon, Oregon, Texas, Greene, and Jasper counties.

*Spiranthes gracilis* (Bigel.) Beck. Slender Ladies' Tresses.

Dry open woods. Oxylophile. Central and southern Mo.: St. Louis, Jefferson, Franklin, Ste. Genevieve, Iron, Reynolds, Dent, Shannon, Oregon, Texas, Randolph, Boone, Jackson, Dade, Greene, Taney, Stone, Barry, Jasper, Newton, and McDonald counties.

***Spiranthes vernalis* Engelm. & Gray.**

Prairies and dry meadows. Circumneutral. Central and southern Mo., scattered: St. Louis, Jefferson, Jackson, Barton, and Jasper counties.

***Spiranthes lucida* (H. H. Eaton) Ames.**

Moist sandstone ledges along creek and springy ground. Oxylophile. South-eastern Mo.: Texas and Shannon counties. This species blooms during May.

***Spiranthes ovalis* Lindl.**

Rich or low wet woods. Circumneutral. Central and southern Mo., rare and scattered: St. Louis, Mississippi, and Jackson counties.

***Spiranthes cernua* (L.) Richard. Nodding Ladies' Tresses.**

Prairies, meadows, and moist places in glades. Circumneutral. General.

***Spiranthes cernua* var. *ochroleuca* (Rydb.) Ames.**

Prairies and glades. Circumneutral. Central and southern Mo.: Boone, Shannon, Taney, Stone, Barry, Jasper, and Newton counties.

***Goodyera pubescens* (Willd.) R. Br. Downy Rattlesnake Plantain.**

*Epipactis pubescens* (Willd.) A. A. Eaton (G).

*Peromium pubescens* (Willd.) MacM. (B & B).

Moist, rich, sandy soil, in wooded ravines. Oxylophile. Southeastern Mo., local: Ste. Genevieve Co.

***Corallorrhiza wisteriana* Conrad. Coral-root.**

Rich or rocky open woods. Circumneutral. Central and southern Mo.: St. Louis, Jefferson, Franklin, St. Francois, Madison, Boone, Jackson, Greene, Lawrence, and Jasper counties.

***Corallorrhiza odontorrhiza* Nutt. Small Coral-root.**

Moist rich woods. Circumneutral. East-central and southern Mo.: St. Louis, Jefferson, Franklin, Ste. Genevieve, Dunklin, Shannon, and Jasper counties.

***Corallorrhiza trifida* Chatelain. Yellow Coral-root.**

Moist rich hillsides. Circumneutral. Southwestern Mo., rare and local: Lawrence Co.

***Malaxis unifolia* Michx. See Rh. 28: 176. 1926. Adder's-mouth.**

*Microstylis unifolia* (Michx.) BSP. (G).

Dry rich woods. Oxylophile. East-central and southern Mo.: St. Louis, Jefferson, Franklin, Ste. Genevieve, Shannon, Howell, and Greene counties.

***Liparis liliifolia* (L.) Richard. Large Twayblade.**

Dry open woods and hillsides. Oxylophile to circumneutral. General, but uncommon and apparently absent from much of western Mo.: Mercer, Sullivan, Schuyler, Clark, Lewis, Boone, Callaway, St. Louis, Jefferson, Franklin, Ste. Genevieve, Cape Girardeau, Dunklin, Phelps, Reynolds, Shannon, Texas, Howell, Douglas, Ozark, Greene, Jasper, and McDonald counties.

***Aplectrum hyemale* (Muhl.) Torr. Putty-root, Adam-and-Eve.**

Rich or alluvial woods. Circumneutral. Central and southern Mo.: Boone, Callaway, Warren, St. Charles, St. Louis, Jefferson, Franklin, Ste. Genevieve, Washington, Madison, Iron, Wayne, Clay, Jackson, and Greene counties.



*Hexalectris spicata* (Walt.) Barnh. See Rh. 17: 136. 1915. Crested Coral-root.

*Hexalectris aphylla* (Nutt.) Raf. (G), (B & B).

Rich rocky woods. Oxylophile to circumneutral. Eastern Mo. south of the Missouri River, rare: St. Louis, Jefferson, Franklin, Dunklin, Phelps, Pulaski, and Texas counties.

### Fam. PIPERACEAE

*Saururus cernuus* L. Lizard's-tail.

Swampy woods and borders of sloughs and sluggish streams. Circumneutral. Central and southern Mo.: Gasconade, Franklin, St. Louis, Jefferson, Bollinger, Mississippi, New Madrid, Pemiscot, Dunklin, Butler, Ripley, Carter, Wayne, Iron, Oregon, Reynolds, Shannon, Dent, Crawford, Texas, Phelps, Maries, Osage, Camden, Pulaski, Laclede, Dallas, Greene, Barry, Barton, Jasper, Newton, and McDonald counties.

### Fam. SALICACEAE

*Salix nigra* Marsh. Black Willow.

Low woods and borders of streams, sloughs, and ponds. Circumneutral. General.

*Salix longipes* Shuttlw. var. *Wardii* (Bebb) Schneider, Bot. Gaz. 65: 22. 1918.

Ward's Willow.

*Salix Wardii* Bebb (G), (B & B).

Rocky banks of streams. Oxylophile to circumneutral. Southern and central Mo. and locally northward along Missouri and Mississippi rivers.

*Salix amygdaloides* Anders. Peach-leaved Willow.

Low woods and alluvial banks of streams, especially along the larger rivers. Circumneutral. Northern, central, and eastern Mo., absent from most of the Ozark region.

*SALIX ALBA* L. White Willow.

Moist ground along banks of streams and ponds. Circumneutral. Often planted and escaping. General but scattered.

*SALIX ALBA* var. *VITELLINA* (L.) Koch.

In similar situations to the typical form and more common in cultivation and as an escape.

*SALIX ALBA* var. *CALVA* G. F. W. Mey.

*Salix coerulea* (Sm.) K. Koch.

Occasionally found as an escape, in similar situations to the last.

*Salix fragilis* L. Crack Willow, Brittle Willow.

Low grounds along streams. Scattered: St. Louis, Atchison, and Dekalb counties.

*Salix interior* Rowlee. Sand-bar Willow.

*Salix longifolia* Muhl., not Lam. (G).

Wet alluvial banks and sand-bars along streams and ponds. Circumneutral. General.

**Salix interior** var. **Wheeleri** Rowlee, Bull. Torr. Bot. Club 27: 253, pl. 9. 1900.

Alluvial banks and sand bars along streams. Circumneutral. Scattered: Clark, Monroe, Clay, and Jackson counties.

**SALIX BABYLONICA** L. Weeping Willow.

Escaped from cultivation in Jackson Co.

**Salix cordata** Muhl. Heart-leaved Willow.

Wet open ground along streams and about springs. Oxylophile to circumneutral. General but not common: Clark, Lewis, Knox, St. Louis, Ste. Genevieve, Perry, Washington, Iron, Madison, Wayne, Carter, Gasconade, Shannon, Texas, Howell, Wright, Douglas, Schuyler, Adair, Putnam, Sullivan, Linn, Saline, Boone, Cooper, Benton, Polk, Greene, Taney, Mercer, Gentry, Livingston, Harrison, Worth, Atchison, Jackson, Bates, Vernon, Jasper, and Lawrence counties.

**Salix cordata** var. **angustata** Anders.

Moist ground along streams. Oxylophile to circumneutral. Scattered, mainly in northern Mo.: Clark, Knox, Schuyler, Adair, Wayne, Sullivan, Grundy, Harrison, Nodaway, Saline, and Jackson counties.

**Salix missouriensis** Bebb.

*Salix cordata* var. *myricoides* (Muhl.) Carey (G), in part.

Low wet ground, mainly along the larger rivers. Circumneutral. Northern, central, and eastern Mo.: Clark, Marion, Boone, Warren, St. Louis, Cape Girardeau, Worth, Atchison, Holt, Clay, and Jackson counties.

**Salix discolor** Muhl. Pussy Willow.

Low ground along streams. Circumneutral. Northeastern Mo., local: Clark Co.

**Salix petiolaris** Sm.

Low wet ground along streams. Circumneutral. Northeastern Mo.: Marion and Pike counties.

**Salix humilis** Marsh. Prairie Willow.

Prairies, thickets, and open woods. Oxylophile to circumneutral. General.

**Salix humilis** var. **rigidiuscula** Anders.

In similar situations to the preceding. Circumneutral. Scattered: Shannon, Atchison, Holt, and Jackson counties.

**Salix tristis** Ait. Dwarf Gray Willow, Dwarf Pussy Willow.

Dry prairies and rocky or gravelly banks. Circumneutral to oxylophile. Scattered: Pike, Dent, Phelps, Putnam, Sullivan, Harrison, and Jackson counties.

**Salix sericea** Marsh. Silky Willow.

Along small rocky streams and in boggy ground about springs. Oxylophile. Eastern Ozark region: St. Louis, Washington, St. Francois, Perry, Cape Girardeau, Bollinger, Madison, Iron, Carter, and Texas counties.

**SALIX PURPUREA** L. Purple Willow.

Moist or wet ground. Cultivated and occasionally escaped. Pike Co.

**Salix myricoides** Muhl.

A hybrid between *Salix cordata* and *S. sericea*. Local: St. Louis Co.

*Salix humilis* × *missouriensis*.

Wet ground along streams. Jackson Co.

*Salix longipes* var. *Wardii* × *sericea*.

Wet rocky ground. St. Francois Co.

*Salix cordata* × *longipes* var. *Wardii*.

Along rocky streams. Taney Co.

*Salix cordata* × *nigra*.

Low open ground. Atchison Co.

*Salix cordata* × *humilis*.

Low ground along small streams. Putnam Co.

*Salix longipes* var. *Wardii* × *nigra*.

Along rocky streams. St. Louis, St. Francois, Iron, Dunklin, and Jasper counties.

*Salix amygdaloides* × *nigra*.

Low ground along river. St. Louis Co.

*Populus deltoides* Marsh. Cottonwood.

*Populus balsamifera* of recent auth., and perhaps of L., in part.

Moist or wet, usually alluvial, ground along streams. Circumneutral. General and probably in every county.

*Populus deltoides* f. *pilosa* (Sarg.) Sudw.

*Populus balsamifera* var. *pilosa* Sarg.

Swamps and low woods. Circumneutral. Southeastern Mo., local: Dunklin Co.

*POPULUS CANADENSIS* Moench. var. *EUGENEI* (Simon-Louis) Schelle. Carolina Poplar.

Frequently planted under the name of Carolina Poplar and occasionally escaping in thickets and along streams. Jasper Co.

*Populus tremuloides* Michx. Quaking Aspen.

Thickets and borders of upland woods. Circumneutral to oxylophile. Northeastern Mo.: Clark and Adair counties, and also reported from Sullivan Co.

*Populus grandidentata* Michx. Large-toothed Aspen.

In similar situations to the last. Local: Clark Co. Probably introduced or escaped from cultivation.

*POPULUS ALBA* L. Silver Poplar.

Commonly planted and escaping freely into thickets and along fence rows and borders of small streams. Scattered: Ralls, Pike, St. Louis, Franklin, Reynolds, Dent, Boone, Mercer, Vernon, and Jasper counties.

*Populus heterophylla* L. Downy Poplar, Swamp Cottonwood.

Swamps and low wet woods. Circumneutral. Southeastern Mo.: Cape Girardeau, Bollinger, Scott, Mississippi, New Madrid, Pemiscot, Dunklin, Stoddard, Wayne, Butler, and Ripley counties.

## Fam. LEITNERIACEAE

*Leitneria floridana* Chapm. Cork Wood.

Deep swamps. Circumneutral. Southeastern Mo.: Dunklin, Butler, and Ripley counties.

## Fam. JUGLANDACEAE

*Juglans nigra* L. Black Walnut.

Rich or open woods, along streams. Circumneutral to calciphile. General and probably found in every county.

*Juglans cinerea* L. Butternut.

Rich woods and along bluffs. Circumneutral. General except in extreme western part of state, but nowhere common: Clark, Schuyler, Sullivan, Adair, Lewis, Macon, Shelby, Marion, Monroe, Ralls, Pike, Lincoln, Audrain, St. Louis, Jefferson, Franklin, St. Francois, Iron, Madison, Bollinger, Cape Girardeau, Scott, Mississippi, Stoddard, Dunklin, Butler, Wayne, Carter, Ripley, Reynolds, Shannon, Oregon, Texas, Crawford, Dent, Phelps, Pulaski, Maries, Boone, Howard, Cooper, Saline, Lafayette, Henry, Morgan, Miller, Camden, Benton, Hickory, Dallas, Laclede, Wright, Douglas, Ozark, Taney, Greene, and Stone counties.

*Carya Pecan* (Marsh.) Engl. & Graebn. Pecan.

*Carya illinoensis* (Wang.) K. Koch (G).

*Hicoria Pecan* (Marsh.) Britton (B & B).

Low woods and alluvial ground along streams. Circumneutral. General but most frequent along the larger rivers: Clark, Lewis, Pike, Lincoln, Montgomery, St. Charles, St. Louis, Jefferson, Ste. Genevieve, Perry, Cape Girardeau, Bollinger, Mississippi, Pemiscot, Dunklin, Ripley, Ozark, Gasconade, Maries, Cole, Morgan, Cooper, Howard, Carroll, Adair, Livingston, Platte, Clay, Jackson, Henry, Bates, Vernon, Jasper, and McDonald counties.

*Carya aquatica* (Michx. f.) Nutt. Bitter Pecan, Swamp Hickory.

Swamps and low wet woods. Circumneutral. Southeastern Mo.: Bollinger, Scott, Dunklin, and Butler counties.

*Carya cordiformis* (Wang.) K. Koch. Pignut Hickory, Bitternut Hickory.

*Hicoria cordiformis* (Wang.) Britton (B & B).

Woods, usually in moist ground along streams. Circumneutral. General.

*Carya cordiformis* var. *latifolia* Sarg. Trees & Shrubs 2: 206. 1913.

In similar situations to the typical form. Circumneutral. General but not common: Clark, Marion, Shelby, Shannon, Mercer, Harrison, Nodaway, Jackson, Jasper, and McDonald counties.

*Carya ovata* (Mill.) K. Koch. Shag-bark or Shell-bark Hickory.

*Hicoria ovata* (Mill.) Britton (B & B).

Woods, limestone hills, and borders of streams. Calciphile. General and found in nearly all if not all counties of the states, though uncommon in some parts of the Ozark region.

*Carya ovata* var. *ellipsoidalis* Sarg. Bot. Gaz. 66: 235. 1918.

Occasionally found with the typical form. Scattered: Marion, Ralls, and Johnson counties.

*Carya laciniosa* (Michx. f.) Loud. Kingnut, Big Shell-bark Hickory.

Low alluvial woods along streams. Circumneutral. General except in most of the Ozark region: Clark, Scotland, Schuyler, Putnam, Mercer, Adair, Livingston, Linn, Macon, Shelby, Chariton, Monroe, Audrain, Lincoln, St. Louis, Jef-

erson, Cape Girardeau, Bollinger, Madison, Scott, Mississippi, Pemiscot, Dunklin, Stoddard, Wayne, Butler, Ripley, Maries, Cole, Moniteau, Boone, Gentry, Atchison, Jackson, Johnson, St. Clair, Hickory, Cedar, Lawrence, Vernon, Barton, and Jasper counties.

*Carya tomentosa* Nutt. Mocker Nut, White Hickory.

*Carya alba* (L.) K. Koch, not Nutt. (G), (B & B).

Dry upland woods. Oxylophile. Usually on sandstone, chert, or igneous rocks. General.

*Carya tomentosa* f. *ficoides* (Sarg.) Palmer & Steyermark, comb. nov.

*Carya alba* var. *ficoides* Sarg. Trees & Shrubs 2: 206. 1913.

Dry upland woods. Oxylophile. Southwestern Mo.: Jasper Co.

*Carya tomentosa* f. *ovoidea* (Sarg.) Palmer & Steyermark, comb. nov.

*Carya alba* var. *ovoidea* Sarg. Bot. Gaz. 66: 238. 1918.

Rocky upland woods. Oxylophile. Southwestern Mo.: McDonald Co.

*Carya tomentosa* var. *subcoreacea* (Sarg.) Palmer & Steyermark, comb. nov.

*Carya alba* var. *subcoreacea* Sarg. Trees & Shrubs 2: 207. 1913.

Dry upland woods. Oxylophile. Southern Mo.: Dunklin, Shannon, Texas, Barry, and McDonald counties.

*Carya Buckleyi* Durand var. *arkansana* Sarg. Bot. Gaz. 66: 249. 1918.

Dry and rocky upland woods. Oxylophile. Eastern, central, and southern Mo.: Marion, Ralls, Pike, St. Louis, Jefferson, Ste. Genevieve, Perry, Dunklin, Butler, Wayne, Carter, Ripley, Oregon, Howell, Shannon, Texas, Iron, Dent, Washington, Crawford, Phelps, Pulaski, Maries, Gasconade, Boone, Saline, Moniteau, Pettis, Jackson, Henry, Benton, Camden, Hickory, Dallas, Polk, Cedar, Vernon, Dade, Douglas, Ozark, Taney, Stone, Barry, Jasper, Newton, and McDonald counties.

*Carya Buckleyi* var. *villosa* Sarg. Bot. Gaz. 66: 251. 1918.

*Carya glabra* var. *villosa* (Sarg.) Robinson (G).

*Hicoria villosa* (Sarg.) Ashe (B & B).

Dry and rocky upland woods. Oxylophile. Eastern, central, and southern Mo.: Marion, Ralls, St. Louis, Ste. Genevieve, Iron, Bollinger, Dunklin, Howell, Phelps, Pettis, Jackson, Jasper, and McDonald counties.

*Carya glabra* (Mill.) Spach.

Upland woods. Oxylophile. Southeastern Mo.: Cape Girardeau and Dunklin counties.

*Carya ovalis* (Wang.) Sarg.

Dry or rocky upland woods. Oxylophile. Southeastern Mo.: Ste. Genevieve and Dunklin counties.

*Carya ovalis* var. *obovatis* Sarg. Trees & Shrubs 2: 209. 1913.

*Carya glabra* (Mill.) Spach, in part (G).

*Hicoria glabra* (Mill.) Britton, in part (B & B).

Dry and rocky upland woods. Oxylophile. Eastern and southern Mo.: Marion, Ralls, Pike, St. Louis, Washington, Iron, Madison, Cape Girardeau, Mississippi, Dunklin, Butler, Wayne, Shannon, Ozark, Taney, Stone, Greene, Benton, Hickory, St. Clair, Jasper, and Newton counties.

*Carya ovalis* var. *odorata* Sarg. Trees & Shrubs 2: 208. 1913.

*Carya microcarpa* Nutt., in part (G).

*Hicoria microcarpa* (Nutt.) Britton, in part (B & B).

Rocky upland woods. Oxylophile. Southeastern Mo., in the Iron Mountain sub-region: Iron and Madison counties.

*Carya ovalis* var. *obcordata* Sarg. Trees & Shrubs 2: 208. 1913.

*Carya microcarpa* Nutt., in part (G).

*Hicoria microcarpa* (Nutt.) Britton, in part (B & B).

Dry and rocky uplands. Oxylophile. Eastern, central, and southern Mo.: Marion, St. Louis, Iron, Madison, Bollinger, Dunklin, Ripley, Shannon, Boone, Howard, Cooper, Saline, Pettis, Johnson, Douglas, Ozark, Taney, Stone, Cedar, Vernon, Barton, Jasper, and McDonald counties.

*Carya ovalis* var. *obcordata* f. *vestita* Sarg. Bot. Gaz. 66: 246. 1918.

Dry upland woods. Oxylophile. Scattered: Montgomery, Gasconade, and Henry counties.

### Fam. BETULACEAE

*Corylus americana* Walt. Hazelnut.

Thickets and borders of woods. Circumneutral. General and probably in every county of the state.

*Corylus americana* f. *missouriensis* (A. DC.) Fernald, Rh. 34: 96. 1932.

Occasionally found with the typical form. Scattered.

*Corylus americana* var. *indehiscens* Palmer & Steyermark, var. nov.

Thickets, fence-rows, and borders of woods. Circumneutral. Scattered: Jackson, Johnson, Jasper, and Newton counties, and perhaps more widely distributed.

A typo differt involuero fructus indehiscente vel dehiscente ad unum marginem.

Differs from the typical form in having the involucre of the fruit completely united on one side and usually partly united, towards the base, on the other side. North Carolina to Missouri and Arkansas. It has sometimes been confused with *C. cornuta* Marsh. (*C. rostrata* Ait.), which is rare in Missouri and which seems to be confined to the southeastern counties.

NORTH CAROLINA: Sept. 19, 1897, *Biltmore Herb. 1244b*; MISSOURI: Greenwood, Jackson Co., Sept. 5, 1924, *B. F. Bush 10332* (Herb. Arn. Arb. TYPE); same locality and date *E. J. Palmer 26035* (Herb. Arn. Arb.); ARKANSAS: Martinsville, Faulkner Co., Oct. 13, 1924, *E. J. Palmer 26537* (Herb. Arn. Arb.); Hot Springs, Garland Co., Oct. 11, 1925, *E. J. Palmer 29160* (Herb. Arn. Arb.).

*Corylus cornuta* Marsh. Beaked Hazelnut.

*Corylus rostrata* Ait. (G), (B & B).

Thickets and open woods. Circumneutral to oxylophile. Southeastern Mo.: Butler Co.

*Ostrya virginiana* (Mill.) K. Koch. Hop Hornbeam.

Borders of upland woods and along rocky bluffs and hillsides. Circumneutral to calciphile. General and probably in every county.

*Ostrya virginiana* var. *glandulosa* (Spach) Sarg. Bot. Gaz. 67: 216. 1919.

In similar situations to the preceding. Known in Clark, Jackson, and Jasper counties, and probably more widely distributed, though uncommon.



***Carpinus caroliniana* Walt.** Ironwood, Blue Beech.

Along streams and bluffs, and in low woods. Circumneutral. Eastern, central, and southern Mo.; apparently absent from most of the northern and western counties: Clark, Lewis, Ralls, Pike, Lincoln, Warren, St. Charles, St. Louis, Jefferson, Washington, St. Francois, Perry, Cape Girardeau, Bollinger, Madison, Iron, Reynolds, Wayne, Scott, Mississippi, Pemiscot, Dunklin, Stoddard, Butler, Ripley, Carter, Dent, Shannon, Oregon, Howell, Texas, Pulaski, Phelps, Callaway, Boone, Howard, Carroll, Saline, Buchanan, Cole, Miller, Morgan, Camden, Benton, Hickory, Douglas, Ozark, Taney, Stone, Barry, and McDonald counties.

***Betula nigra* L.** River Birch.

Banks of rivers and creeks. Circumneutral. General but apparently absent from parts of the Ozark region and some of the northwestern counties.

***Alnus rugosa* (Du Roi) Spreng.** Smooth Alder.

Banks of streams, and about springs and bogs. Oxylophile. Eastern, central, and southern Mo.: Lewis, Marion, Pike, Lincoln, Warren, St. Louis, Jefferson, Franklin, Crawford, Washington, St. Francois, Ste. Genevieve, Perry, Bollinger, Madison, Iron, Reynolds, Wayne, Stoddard, Ripley, Carter, Oregon, Howell, Shannon, Texas, Dent, Pulaski, Miller, Cole, Boone, Benton, St. Clair, Cedar, Douglas, Ozark, Taney, and Newton counties.

**Fam. FAGACEAE*****Fagus grandifolia* Ehrh.** Beech.

Woods, low hills, and along streams. Circumneutral. Southeastern Mo.: Cape Girardeau and Stoddard counties.

***Fagus grandifolia* var. *caroliniana* (Loud.) Fernald & Rehder.**

In similar situations to the preceding and more common. Southeastern Mo.: Perry, Cape Girardeau, Bollinger, Scott, Stoddard, Dunklin, and Butler counties.

***Castanea ozarkensis* Ashe, Bull. Torr. Bot. Club 50: 360. 1923.** Chinquapin.

*Castanea pumila* of auth. in part, not Mill. (G), (B & B).

Rocky woods. Oxylophile. Southern Mo.: Howell, Barry, and McDonald counties.

***Quercus alba* L.** White Oak.

Woods, chiefly on dry uplands. Circumneutral. General and probably in every county.

***Quercus alba* f. *latiloba* (Sarg.) Palmer & Steyermark, comb. nov.**

*Quercus alba* var. *latiloba* Sarg.

In similar situations to the preceding and more common in some sections. A complete series of gradations are found between the two forms, and it scarcely seems distinct enough to be regarded as a variety.

***Quercus stellata* Wang.** Post Oak.

Upland woods and along small streams. Oxylophile to circumneutral. General and probably in every county.

***Quercus lyrata* Walt.** Overcup Oak.

Low or swampy woods. Circumneutral. East-central and southeastern Mo.: St. Louis, Jefferson, Cape Girardeau, Bollinger, Scott, Mississippi, New Madrid, Pemiscot, Dunklin, Stoddard, Butler, Wayne, and Ripley counties.

**Quercus macrocarpa** Michx. Bur Oak.

Low woods, chiefly in alluvial soil along streams. Circumneutral to calciphile. General.

**Quercus macrocarpa** var. *olivaeformis* (Michx. f.) Gray.

Loess hills along the Missouri River. Northwestern Mo.: Atchison Co.

**Quercus bicolor** Willd. Swamp White Oak.

Low hills and alluvial ground along streams. Circumneutral. Northern, eastern, and central Mo., commonest north of the Missouri River and absent from most of the Ozark region.

**Quercus Prinus** L. See Rh. 17: 40. 1915. Cow Oak, Basket Oak.

*Quercus Michauxii* Nutt. (G), (B & B).

Low woods along streams. Circumneutral. Southeastern Mo.: Iron, Madison, Bollinger, Cape Girardeau, Scott, Mississippi, Stoddard, Dunklin, Butler, and Ripley counties.

**Quercus Muhlenbergii** Engelm. Chinquapin Oak, Yellow Oak.

Upland woods, glades, and along bluffs. Calciphile to circumneutral. Most frequent in limestone areas, but also found sometimes on sandstone or igneous rocks. General and probably in every county.

**Quercus Muhlenbergii** f. *Alexanderi* (Britton) Trelease.

*Quercus Alexanderi* Britton.

In similar situations to the preceding into which it passes by gradations. General but scattered.

**Quercus prinoides** Willd. Shin Oak, Scrub Oak.

Borders of woods, rocky bluffs, and glades. Calciphile. Central, southern, and western Mo., mostly in the western part: St. Louis, Shannon, Howell, Mercer, Harrison, Daviess, Caldwell, Worth, Gentry, Nodaway, Atchison, Holt, Andrew, Clinton, Jackson, Cass, Johnson, St. Clair, Vernon, Polk, Dade, Greene, and Stone counties.

**Quercus falcata** Michx. Spanish Oak, Southern Red Oak.

*Quercus rubra* L., in part, not of most recent auth.

*Quercus triloba* Michx. (B & B), in part.

Woods, both alluvial and rocky ground. Oxylophile to circumneutral. Southern Mo.: Perry, Cape Girardeau, Bollinger, Scott, Mississippi, New Madrid, Pemisecot, Dunklin, Stoddard, Butler, Wayne, Carter, Oregon, Ripley, Howell, Ozark, Stone, and Barry counties.

**Quercus falcata** f. *triloba* (Michx.) Palmer & Steyermark, comb. nov.

*Quercus triloba* Michx., in part (B & B).

Upland or lowland woods. Southeastern Mo.: Ripley and Dunklin counties.

**Quercus falcata** var. *pagodaefolia* Ell.

*Quercus falcata* Michx., in part (G).

*Quercus pagodaefolia* (Ell.) Ashe (B & B).

In similar situations to the last. Southeastern Mo.: Dunklin and Butler counties.

**Quercus falcata** var. *leucophylla* (Ashe) Palmer & Steyermark, comb. nov.

*Quercus rubra* var. *leucophylla* Ashe.

Low woods. Southeastern Mo.: New Madrid Co.

*Quercus borealis* Michx. f. Red Oak.

*Quercus rubra* var. *ambigua* (Michx. f.) Fernald (G).

Rarely occurring in our region with the following and common form. Jackson Co.

*Quercus borealis* var. *maxima* Ashe, Proc. Soc. Am. Foresters 11: 90. 1916; and Rh. 18: 48. 1916. Red Oak.

*Quercus rubra* of auth., not L. (G), (B & B).

Upland woods. Frequent along bluffs and steep hillsides in limestone regions, but also found on siliceous and igneous rocks. Circumneutral. General, and probably in every county.

*Quercus palustris* Muench. Pin Oak.

Low and swampy woods. Circumneutral. General, but absent or uncommon in much of the Ozark region, where it is sometimes found in sinks or shallow ponds and is known as Turkey Oak.

*Quercus coccinea* Muench. Scarlet Oak.

Upland woods. Oxylophile. Southeastern Mo., mostly in the eastern Ozarks: Ste. Genevieve, Washington, Crawford, Dent, Bollinger, Iron, Madison, Wayne, Butler, Dunklin, Ripley, Carter, Reynolds, Shannon, Oregon, Texas, and Howell counties.

*Quercus coccinea* var. *tuberculata* Sarg. Bot. Gaz. 65: 426. 1918.

Occasionally found with the typical form. Southwestern Mo.: Butler Co.

*Quercus ellipsoidalis* E. J. Hill. Jack Oak, Yellow Oak.

Upland woods. Circumneutral. Northern Mo., local: Harrison Co.

*Quercus shumardii* Buckley. Red Oak.

Low or upland woods. Circumneutral. Central and southern Mo.: Jefferson, Pemiscot, Dunklin, Ripley, Maries, Pulaski, Dent, Shannon, Howell, Montgomery, Ozark, Pettis, Jackson, Bates, Jasper, and McDonald counties.

*Quercus shumardii* var. *Schneckii* (Britton) Sarg. Red Oak.

*Quercus Schneckii* Britton (B & B).

*Quercus texana* of auth., not Buckley (G).

Upland woods, bluffs, and alluvial ground along streams. Circumneutral to calciphile. Central and southern Mo.

*Quercus Nuttallii* Palmer, Jour. Arnold Arb. 8: 52. 1927.

Low wet woods. Circumneutral. Southeastern Mo.: Butler Co.

*Quercus nigra* L. Water Oak.

Low woods. Circumneutral. Southeastern Mo.: Pemiscot, Dunklin, Butler, and Ripley counties.

*Quercus Phellos* L. Willow Oak.

Southeastern Mo. and locally north along Mississippi River: St. Louis, Madison, Bollinger, Scott, Mississippi, New Madrid, Pemiscot, Dunklin, Stoddard, Butler, and Ripley counties.

*Quercus marilandica* Muench. Black Jack Oak.

Dry or rocky upland woods. Oxylophile to circumneutral. General, but commonest in the Ozark region.

**Quercus imbricaria** Michx. Shingle Oak.

Upland woods and along small streams. Circumneutral. General but apparently absent from a number of the Ozark and southwestern counties.

**Quercus velutina** Lam. Black Oak.

Upland woods and well-drained ground along streams. Oxylophile to circumneutral. General and probably in every county.

**Quercus velutina** var. *missouriensis* Sarg.

In similar situations to the last. General but scattered and commonest in the Ozark region: Clark, Audrain, Shannon, Dunklin, Ozark, Taney, Stone, Barry, Jackson, Jasper, and McDonald counties.

**Quercus leiodermis** Ashe, Jour. Elisha Mitchell Sci. Soc. 40: 43. 1924.

Upland woods. Circumneutral. Jackson and St. Clair counties. Perhaps only a form of *Q. velutina*.

× **Quercus Hillii** Trelease, Proc. Am. Phil. Soc. 56: 49. 1917.

A hybrid between *Q. macrocarpa* and *Q. Muhlenbergii*. Holt and Jackson counties.

× **Quercus Bebbiana** Schneider, Handb. Laubholz. 1: 201. 1904.

A hybrid between *Q. alba* and *Q. macrocarpa*. Marion and Jackson counties.

× **Quercus Fernowii** Trelease, Proc. Am. Phil. Soc. 56: 49. 1917.

A hybrid between *Q. alba* and *Q. stellata*. St. Louis Co.

× **Quercus Leana** Nutt.

A hybrid between *Q. imbricaria* and *Q. velutina*. General but scattered: Adair, Boone, Jefferson, Washington, Iron, Madison, Saline, Dekalb, Jackson, Dade, and Christian counties.

× **Quercus Bushii** Sarg. Bot. Gaz. 65: 453. 1918.

A hybrid between *Q. marilandica* and *Q. velutina*. Jackson, Johnson, and Jasper counties.

× **Quercus Porteri** Trelease, Proc. Am. Phil. Soc. 56: 51. 1917.

A hybrid between *Q. borealis* var. *maxima* and *Q. velutina*. Clark, Dunklin, and Jackson counties.

× **Quercus exacta** Trelease, Proc. Am. Phil. Soc. 56: 49. 1917.

A hybrid between *Q. imbricaria* and *Q. palustris*. Shelby, Jefferson, Sullivan, and Dekalb counties.

× **Quercus ludoviciana** Sarg. Trees & Shrubs 2: 223. 1913.

× *Quercus subfalcata* Trelease.

A hybrid between *Q. falcata* and *Q. Phellos*. Carter and Butler counties.

× **Quercus Richteri** Baenitz, Allg. Bot. Zeit. 9: 85. 1903.

A hybrid between *Q. borealis* var. *maxima* and *Q. palustris*. Osage and Benton counties.

× **Quercus runcinata** Engelm.

A hybrid between *Q. borealis* var. *maxima* and *Q. imbricaria*. St. Louis, Wayne, and Jackson counties.

× **Quercus tridentata** Engelm.

A hybrid between *Q. imbricaria* and *Q. marilandica*. St. Louis Co.

× *Quercus heterophylla* Michx. f.

A hybrid between *Q. borealis* var. *maxima* and *Q. Phellos*. Dunklin Co.

× *Quercus vaga* Palmer & Steyermark, hyb. nov.

Hybrida intermedia *Q. palustrem* et *Q. velutinam* foliis, gemmis hyemalibus fructuque.

Intermediate in character of foliage, winter buds, and fruit, between *Q. palustris* and *Q. velutina*, the supposed parent species, both of which were growing in close proximity to the type tree.

Alluvial ground along small upland streams. Northeastern Missouri, and to be expected elsewhere in the range of the parent species.

MISSOURI: Maryville, Nodaway Co., June 13, 1924, E. J. Palmer 25421 (Arn. Arb. TYPE).

× *Quercus inaequalis* Palmer & Steyermark, hyb. nov.

Hybrida intermedia *Q. Phellos* et *Q. velutinam* foliis, gemmis hyemalibus fructuque.

Intermediate in character of foliage, winter buds, and fruit, between *Q. Phellos* and *Q. velutina*, the supposed parent species, both of which were growing near the type tree. The leaves in this hybrid are extremely variable and many of them unsymmetrical.

Low hills bordering lowlands. Southeastern Missouri to Arkansas and Louisiana.

MISSOURI: Poplar Bluff, Butler Co., Sept. 11, 1919, E. J. Palmer 16342 (Arn. Arb. TYPE); same locality, Oct. 5, 1921, Palmer 20676 (Arn. Arb. topo-type); ARKANSAS: Hot Springs, Garland Co., Oct. 10, 1925, E. J. Palmer 29098 (Arn. Arb.); same locality, Nov. 5, 1925, Palmer 29577 (Arn. Arb.); Hardinville, Faulkner Co., Oct. 13, 1924, E. J. Palmer 26505 (Arn. Arb.); LOUISIANA: near Sardis, July 30, 1915, E. S. Cocks 814 (Arn. Arb.); same locality, Sept. 1-15, 1915, E. S. Cocks 938 (Arn. Arb.).

× *Quercus Shirlingii* Bush, hyb. nov.

Hybrida intermedia *Q. imbricaria* et *Q. Shumardii* var. *Schneckii* foliis fructuque.

Foliage and fruit intermediate between *Q. imbricaria* and *Q. Shumardii* var. *Schneckii*, the supposed parent species, both of which were growing with the type tree. This species is named in honor of Professor A. E. Shirling, of Teachers' College at Kansas City, Missouri.

MISSOURI: Oak Grove, Jackson Co., Oct. 22, 1927, B. F. Bush 11637 (Arn. Arb. TYPE).

× *Quercus mutabilis* Palmer & Steyermark, hyb. nov.

Hybrida intermedia *Q. palustrem* et *Q. Shumardii* var. *Schneckii* foliis fructuque.

Intermediate in foliage and fruit between *Q. palustris* and *Q. Shumardii* var. *Schneckii*, both of which were growing with the type tree.

Low hills bordering river valley. Western Missouri.

MISSOURI: Montith Junction, Bates Co., Sept. 10, 1924, E. J. Palmer 26069 (Arn. Arb. TYPE).

## Fam. ULMACEAE

*Ulmus americana* L. White Elm, American Elm.

Woods, principally along streams. Circumneutral. General, and probably in every county.

*Ulmus Thomasi* Sarg. Cork Elm, Rock Elm.

*Ulmus racemosa* Thomas, not Borkh. (G).

Woods along streams. Circumneutral. Northern, central, and southeastern Mo.: Clark, Monroe, Boone, Stoddard, Dunklin, Atchison, and Jackson counties.

*Ulmus alata* Michx. Winged Elm.

Low and upland woods. Oxylophile to circumneutral. East-central and southern Mo.: Lincoln, Warren, St. Louis, Jefferson, Franklin, Gasconade, St. Francois, Ste. Genevieve, Perry, Cape Girardeau, Bollinger, Madison, Iron, Reynolds, Wayne, Stoddard, Scott, Mississippi, New Madrid, Pemiscot, Dunklin, Butler, Ripley, Carter, Oregon, Dent, Howell, Shannon, Texas, Phelps, Pulaski, Callaway, Cooper, Cole, Douglas, Ozark, Taney, Christian, Greene, Stone, Barry, and McDonald counties.

*Ulmus fulva* Michx. Slippery Elm, Red Elm.

Upland woods and along bluffs. Calciphile to circumneutral. General and probably in every county.

*Planera aquatica* (Walt.) J. F. Gmel. Water Elm, Planer Tree.

Swamps and low wet woods. Circumneutral. Southeastern Mo.: Mississippi, New Madrid, Pemiscot, Dunklin, Butler, and Ripley counties.

*Celtis occidentalis* L. Hackberry, Sugarberry.

Low and upland woods, mostly along streams. Circumneutral. General but less common than the varieties that follow: Mercer, Putnam, Marion, Madison, Iron, Texas, Daviess, Gentry, Dekalb, Nodaway, Buchanan, St. Clair, and Jasper counties.

*Celtis occidentalis* var. *crassifolia* (Lam.) Gray.

Low and upland woods along streams. Circumneutral. General: Clark, Scotland, Knox, Adair, Sullivan, Carroll, Boone, Pike, Cape Girardeau, Butler, Oregon, Shannon, Ozark, Taney, Stone, Harrison, Grundy, Livingston, Atchison, Johnson, Jasper, and McDonald counties.

*Celtis occidentalis* var. *canina* (Raf.) Sarg. Bot. Gaz. 67: 217. 1919.

Low and upland woods along streams. Circumneutral. General and perhaps in every county.

*Celtis laevigata* Willd. Southern Hackberry.

*Celtis mississippiensis* Bosc, in part (G), (B & B).

Low wet woods. Eastern, central, and southern Mo.: Marion, Pike, Montgomery, Gasconade, St. Charles, St. Louis, Jefferson, Perry, Cape Girardeau, Scott, Mississippi, New Madrid, Pemiscot, Dunklin, Butler, Ripley, Shannon, Iron, Cole, Boone, Howard, Jackson, Bates, St. Clair, Jasper, McDonald, Stone, and Taney counties.

*Celtis laevigata* var. *texana* (Scheele) Sarg. Bot. Gaz. 67: 223. 1919.

*Celtis mississippiensis* Bosc, in part (G), (B & B).

Rocky woods, glades, and bluffs. Circumneutral. Central and southern Mo.,



mainly in the Ozark region: St. Charles, Perry, Stoddard, Butler, Carter, Oregon, Shannon, Ozark, Taney, Stone, Douglas, Christian, Pulaaski, Camden, Benton, Miller, Moniteau, Montgomery, Boone, Jackson, Polk, Greene, St. Clair, Cedar, Lawrence, Jasper, Newton, and McDonald counties.

*Celtis pumila* Pursh. Dwarf Hackberry.

Rocky woods. Calciphile to circumneutral. Central and southern Mo.: St. Louis, Madison, Carter, Shannon, Dent, Jackson, Benton, Taney, Barry, Vernon, and Newton counties.

*Celtis pumila* var. *georgiana* (Small) Sarg. Bot. Gaz. 67: 227. 1919.

*Celtis georgiana* Small (B & B).

Rocky woods, glades, and bluffs. Central and southern Mo.: Ralls, Lincoln, Montgomery, St. Francois, Ste. Genevieve, Madison, Iron, Wayne, Carter, Oregon, Shannon, Dent, Crawford, Maries, Miller, Camden, Benton, Polk, Dallas, Henry, Hickory, Ozark, Taney, Stone, St. Clair, Cedar, Vernon, Jasper, Newton, McDonald, and Barry counties.

*Celtis pumila* var. *deamii* Sarg. Bot. Gaz. 67: 228. 1919.

Rocky woods and glades. Circumneutral. Southeastern Mo., Iron Mountain sub-region: St. Francois and Iron counties.

### Fam. MORACEAE

*Maclura pomifera* (Raf.) Schneider. Osage Orange, Bodarc.

Pastures, thickets, and borders of woods. Calciphile to circumneutral. Probably not native in the state, but formerly much planted for hedges and freely escaping. General but scattered and absent from many of the Ozark counties: Adair, Shelby, Audrain, St. Louis, Franklin, Gasconade, Iron, New Madrid, Pemiscot, Howell, Laclede, Livingston, Caldwell, Dekalb, Atchison, Holt, Jackson, Johnson, Bates, Vernon, St. Clair, Greene, and Jasper counties.

*Broussonetia papyrifera* (L.) Vent. Paper Mulberry.

Sometimes planted as a shade tree and occasionally escaping. Johnson and Butler counties.

*Morus rubra* L. Red Mulberry.

Low and upland woods. Circumneutral. General and probably in every county.

*Morus alba* L. White Mulberry.

Commonly planted and freely escaping. Indifferent. General but scattered: Clark, Marion, Ralls, Pike, Lincoln, St. Louis, Franklin, Mercer, Harrison, Sullivan, Chariton, Boone, Atchison, Holt, Andrew, Dekalb, Jackson, Johnson, Bates, Vernon, Barton, Jasper, and McDonald counties.

*Cannabis sativa* L. Hemp.

Thickets, open and waste ground. Circumneutral. General.

*Humulus lupulus* L. Hop.

Fertile open and waste ground. Circumneutral. General.

*Humulus japonicus* Sieb. & Zucc. Japanese Hop.

Fertile open ground and waste places. Indifferent. Scattered: Jackson and Jasper counties.

## Fam. URTICACEAE

*URTICA URENS* L. Dwarf Nettle.

Introduced in waste ground. Indifferent. Western Mo., local: Jackson Co.

*Urtica procera* Muhl. See Rh. 28: 192-195. 1926. Slender Nettle.

*Urtica gracilis* of most Am. auth., not Ait. (G), (B & B).

Waste or cultivated ground, rich low or alluvial woods, and fertile soils. Circumneutral. Northern and central Mo.: Marion, Lincoln, St. Charles, St. Louis, Boone, Chariton, Saline, Caldwell, Livingston, Mercer, Harrison, Worth, Knox, Adair, Shelby, Macon, Gentry, Atchison, Holt, Buchanan, Andrew, Platte, Clay, and Jackson counties.

*Urtica chamaedryoides* Pursh.

Low open ground. Circumneutral. Southeastern Mo.: Pemiscot Co.

*Laportea canadensis* (L.) Gaud. Wood Nettle.

Low rich woods. Circumneutral. General.

*Pilea pumila* (L.) Gray. Clearweed, Richweed.

Low woods and boggy ground along streams, and about ponds. Circumneutral. General.

*Boehmeria cylindrica* (L.) Sw. False Nettle.

Open woods, thickets, and moist open ground. Circumneutral. General.

*Parietaria pennsylvanica* Muhl. Pellitory.

Open woods, thickets, and moist open ground. Circumneutral. General.

*Parietaria obtusa* Rydb.

Rocky open woods and glades. Circumneutral. Local: Ozark Co.

## Fam. SANTALACEAE

*Comandra Richardsiana* Fernald. Bastard Toadflax.

Dry rocky woods, prairies, and barrens. Oxylophile to circumneutral. General, but commonest in central and southern Mo. This has been long confused with *C. umbellata*, a northern species which does not reach Mo.

## Fam. LORANTHACEAE

*Phoradendron flavescens* (Pursh) Nutt. Mistletoe.

Parasitic on deciduous trees; low woods and banks of streams. Southern Mo.: Scott, Mississippi, New Madrid, Stoddard, Dunklin, Butler, Ripley, Carter, Reynolds, Shannon, Oregon, Ozark, and Stone counties.

## Fam. ARISTOLOCHIACEAE

*Asarum canadense* L. var. *acuminatum* Ashe. Wild Ginger.

Rich woods and along base of rocky bluffs. Circumneutral. General.

*Asarum canadense* var. *reflexum* (Bicknell) Robinson.

In similar situations to the preceding. General.

*Aristolochia Serpentaria* L. Virginia Snakeroot.

Rich woods and alluvial thickets. Circumneutral. Central and southern Mo.: St. Louis, Jefferson, Franklin, Cape Girardeau, Bollinger, New Madrid,

Dunklin, Butler, Ripley, Carter, Iron, Oregon, Shannon, Dent, Gasconade, Howell, Texas, Maries, Pulaski, Boone, Saline, Jackson, Henry, Wright, Webster, Greene, Christian, Douglas, Ozark, Taney, Stone, Barry, Jasper, and McDonald counties.

*Aristolochia Serpentina* var. *hastata* (Nutt.) Duchartre.

Low swampy woods. Circumneutral. Southeastern Mo., local: Dunklin Co.

*Aristolochia tomentosa* Sims. Pipe Vine, Dutchman's Pipe.

Low woods and thickets along streams. Circumneutral. East-central and southern Mo.: St. Louis, Jefferson, Franklin, Madison, Wayne, Butler, Dunklin, Ripley, Oregon, Shannon, Phelps, Pulaski, Texas, Maries, Wright, Douglas, Ozark, Greene, Stone, Lawrence, Jasper, Newton, and McDonald counties.

### Fam. POLYGONACEAE

*Eriogonum longifolium* Nutt.

Rocky open woods and glades. Oxylophile. Southern Mo., rare and local: Oregon Co.

*RUMEX ELONGATUS* Guss.

Waste open ground. Indifferent. Scattered: Boone, Clay, and Jackson counties.

*RUMEX PATIENTIA* L. var. *KURDICUS* Boiss. Patience Dock.

Waste ground. Indifferent. Introduced in Clay and Jackson counties.

*RUMEX BRITANNICA* L. Great Water Dock.

Low ground along Missouri River. Circumneutral. Local: St. Louis Co.

*RUMEX CRISPUS* L. Narrow-leaved Dock, Curled Dock.

Fields and waste ground. Indifferent. General and common.

*Rumex mexicanus* Meisn.

Moist alluvial ground. Indifferent. Scattered: Clark, Knox, St. Louis, Saline, Mercer, Carroll, Clay, Jackson, and Holt counties.

*Rumex altissimus* Wood. Pale Dock.

Fields, thickets, waste, and alluvial ground. Circumneutral. General.

*Rumex verticillatus* L. Swamp Dock.

Swamps and low wet woods. Circumneutral. General.

*RUMEX SANGUINEUS* L.

Waste ground. Indifferent. Locally introduced in St. Louis Co.

*RUMEX OBTUSIFOLIUS* L. Bitter Dock, Broad-leaved Dock.

Fields, waste ground, and about dwellings. Indifferent. General.

*Rumex maritimus* L. var. *fueginus* (Philippi) Dusén. See Rh. 17: 80-81. 1915.

Sand bars and alluvial ground along the larger rivers. Circumneutral. Central and northwestern Mo.: St. Louis, Franklin, Perry, Boone, Saline, Carroll, Holt, Buchanan, Clay, and Jackson counties. This has been confused with *Rumex persicarioides*, which is not known in Mo.

*Rumex hastatulus* Baldw.

Rocky prairies, glades, and sandy open ground. Oxylophile. Scattered in east-central and southern Mo.: St. Louis, Ste. Genevieve, Scott, Dunklin, and Newton counties.

**RUMEX ACETOSELLA L.** Sour Dock, Sheep Sorrel.

Fields and waste ground. Oxylophile. General.

**RUMEX CRISPUS × OBTUSIFOLIUS.**

Sometimes occurring locally with the parent species. St. Louis, Jefferson, and Carroll counties.

**Polygonum exsertum** Small.

Low alluvial meadows, prairies, and muddy banks. Circumneutral. General.

**Polygonum prolificum** (Small) Robinson.

Open ground. Indifferent. Local: Clay and Jackson counties.

**Polygonum aviculare L.** Knotweed, Knot-grass.

Fields, waste ground, and about dwellings. Indifferent. General and common.

**Polygonum aviculare var. vegetum** Ledeb.

In similar situations to the typical form. Indifferent. Scattered.

**Polygonum aviculare var. angustissimum** Meisn.*Polygonum neglectum* Bess. (B & B).

With the typical form and often commoner. Indifferent. General.

**Polygonum buxiforme** Small.*Polygonum littorale* of auth., not Link (B & B).*Polygonum aviculare* var. *littorale* (G).

Fields and waste ground. Indifferent. General.

**Polygonum erectum L.**

Low wet woods and alluvial banks of streams and ponds. Circumneutral. General.

**Polygonum ramosissimum** Michx.

Prairies and open ground, usually in moist alluvial soil. Circumneutral. General.

**Polygonum achoreum** Blake, Rh. 19: 232. 1917.

Introduced in waste ground. Jackson Co.

**Polygonum triangulum** Bicknell in Britton & Brown, Ill. Fl. ed. 2. 1: 664, fig. 1626. 1913.

Fields and waste ground. Indifferent. Jackson Co.

**Polygonum tenue** Michx.

Rocky prairies, glades, and gravel bars along streams. Oxylophile. Central and southern Mo.: Lincoln, Boone, Montgomery, Warren, St. Charles, Gasconade, Crawford, Jefferson, Ste. Genevieve, St. Francois, Perry, Madison, Bollinger, Iron, Reynolds, Stoddard, Dunklin, Shannon, Phelps, Howell, Pulaski, Maries, Camden, Dallas, Polk, St. Clair, Greene, Jackson, Jasper, Newton, McDonald, and Barry counties.

**Polygonum lapathifolium L.** See Rh. 23: 258-259. 1921.*Polygonum lapathifolium* var. *nodosum* (Pera.) Weinmann (G).

Wet open ground about ponds and sloughs, and in waste ground. Indifferent. General.

**Polygonum densiflorum** Meisn.

Low open ground. Circumneutral. Southeastern Mo.: Scott, Dunklin, and Carter counties.

**Polygonum coccineum** Muhl. See Rh. 27: 162. 1925.

*Polygonum Muhlenbergii* (Meisn.) Wats. (G).

*Persicaria Muhlenbergii* (Wats.) Small (B & B).

Prairies and open woods, and borders of streams, ponds, and sloughs. Circumneutral. General.

**Polygonum coccineum** var. **pratincola** (Greene) Stanford, Rh. 27: 165. 1925.

In similar situations to the typical form. Local: Jackson Co.

**Polygonum natans** Eat.

*Polygonum amphibium* of Am. auth., not L. (G).

*Persicaria amphibia* S. F. Gray (B & B).

In shallow water. Local: Greene Co.

**Polygonum pensylvanicum** L.

Wet ground along borders of streams, ponds, and sloughs, and in waste ground.

Indifferent. General.

**Polygonum pensylvanicum** var. **laevigatum** Fernald, Rh. 19: 73. 1917.

Frequently found with the typical form.

**Polygonum longistylum** Small. See Rh. 27: 182. 1925.

Wet or moist open ground along prairie streams. Circumneutral. Central and southern Mo.; scattered: New Madrid, Dunklin, Clay, Jackson, and Jasper counties.

**Polygonum Hydropiper** L. var. **projectum** Stanford, Rh. 29: 86. 1927. Smartweed, Water Pepper.

*Polygonum Hydropiper* of auth. in part, not L. (G).

*Persicaria Hydropiper* of auth., not Opiz (B & B).

Wet woods and prairies, along sloughs and streams. Circumneutral. General.

**Polygonum punctatum** Ell. Smartweed, Water Pepper.

*Polygonum acre* HBK, not Lam., in part (G).

*Polygonum acre* var. *leptostachyum* Meisn., in part (G).

*Persicaria punctata* (Ell.) Small (B & B).

Wet ground, borders of ponds and sloughs. Circumneutral. General.

**Polygonum robustius** (Small) Fernald, Rh. 23: 147. 1921.

Low wet woods and borders of sloughs. Circumneutral. Southeastern Mo.: Dunklin Co.

**Polygonum orientale** L. Prince's Feather.

Waste ground; escaped from cultivation. Indifferent. Scattered: St. Louis, Boone, Miller, Greene, Taney, Clay, Jackson, Cass, and Jasper counties.

**Polygonum persicaria** L. Lady's Thumb.

Waste and cultivated ground. Circumneutral. General.

**Polygonum setaceum** Baldw.

Swampy open ground and low open woods. Circumneutral. Southeastern Mo.: Dunklin, Butler, and Ripley counties.

**Polygonum hydropiperoides** Michx. See Rh. 28: 24. 1926.

Wet open ground about ponds, streams, and spring branches. Circumneutral. General.

**Polygonum hydropiperoides f. strigosum** (Small) Stanford, Rh. 28: 26. 1926.

*Polygonum hydropiperoides* var. *strigosum* Small (G).

Occasionally found with the typical form.

**Polygonum opelousanum** Riddell. See Rh. 28: 27. 1926.

*Persicaria opelousana* (Riddell) Small (B & B).

Low wet woods. Circumneutral. Southern Mo.: Dunklin, Butler, Ripley, Jasper, Newton, and McDonald counties.

**Polygonum virginianum** L.

Rich woods. Circumneutral. General.

**Polygonum arifolium** L. Halberd-leaved Tear-thumb.

Wet or moist open ground. Circumneutral. Southeastern Mo., local: Stoddard Co.

**Polygonum sagittatum** L. Arrow-leaved Tear-thumb.

Boggy ground about springs and streams. Oxylophile. General but scattered: Putnam, Shelby, Audrain, Boone, Randolph, Lincoln, St. Charles, St. Louis, Jefferson, St. Francois, Bollinger, Mississippi, Dunklin, Shannon, Crawford, Saline, Jackson, St. Clair, Greene, Cedar, Vernon, Barton, and Jasper counties.

**POLYGONUM CONVULVULUS** L. Climbing Buckwheat, Black Bindweed.

Thickets, waste and cultivated ground. Circumneutral. General but scattered.

**Polygonum scandens** L. Climbing False Buckwheat.

Thickets, waste and cultivated ground. Circumneutral. General.

**POLYGONUM CUSPIDATUM** Sieb. & Zucc. See Rh. 32: 223. 1930. Japanese Knotweed.

Cultivated and rarely escaped into thickets and waste places. St. Louis Co.

**FAGOPYRUM ESCULENTUM** Moench. Buckwheat.

Rich cultivated and waste ground. Escaped from cultivation. General but scattered.

**Polygonella americana** (Fisch. & Mey.) Small. Jointweed.

Glades and open sandy ground. Oxylophile. Southeastern Mo.: Iron, Stoddard, and Dunklin counties.

**Brunnichia cirrhosa** Gaertn. Ladies' Ear-drops.

Swamps, low wet woods, and wet thickets. Circumneutral. Southeastern Mo.: Bollinger, Mississippi, New Madrid, Pemiscot, Dunklin, Stoddard, Butler, and Ripley counties.

#### Fam. CHENOPODIACEAE

**Cycloloma atriplicifolium** (Spreng.) Coult. Winged Pigweed.

Sandy fields, rocky or sandy open ground, and along roadways and railways. Oxylophile. General but scattered: Clark, Pike, St. Charles, St. Louis, Franklin, St. Francois, Perry, Stoddard, Dunklin, Randolph, Carroll, Saline, Clay, Jackson, and Jasper counties.

**KOCHIA TRICHOPHYLLA** Stapf. Fire-bush, Summer Cypress

Cultivated and occasionally escaped, in fields and along railroads. Scattered: St. Louis, Callaway, McDonald, Gentry, and Andrew counties.



*KOCHIA SCOPARIA* (L.) Schrad. Standing Cypress, Belvedere.

Escaped from cultivation into waste ground and along railroads. Scattered: St. Louis, Jefferson, Franklin, Andrew, Buchanan, and Jackson counties.

*KOCHIA PROSTRATA* (L.) Schrad.

Waste ground. Indifferent. Introduced in Jackson Co.

*CHENOPODIUM AMBROSIODES* L. Mexican Tea.

Fields, rich waste ground, and about dwellings. Indifferent. General.

*CHENOPODIUM AMBROSIODES* var. *ANTHELMINTICUM* (L.) Gray.

Commonly found with the typical form.

*CHENOPODIUM CARINATUM* R. Br.

Waste ground, fields, and about dwellings, often in rocky or gravelly ground.

Indifferent. Central and southern Mo., scattered: Bollinger, Ripley, Reynolds, Shannon, Oregon, Dent, Howell, Texas, Ozark, Douglas, Jackson, and Vernon counties.

*CHENOPODIUM BOTRYS* L. Feather Geranium, Jerusalem Oak.

Waste ground. Indifferent. Scattered: St. Louis, Shannon, Ozark, Stone, and Jackson counties.

*Chenopodium capitatum* (L.) Asch. Strawberry Blite.

Open ground. Circumneutral. Local: Pike Co.

*CHENOPODIUM GLAUCUM* L. Oak-leaved Goosefoot.

Waste open ground and moist alluvial ground along ponds and the larger rivers. Calciphile to circumneutral. Scattered: St. Louis, Clinton, Holt, and Jackson counties.

*Chenopodium gigantospermum* Aellen in Fedde, Rep. Spec. Nov. 26: 144. 1929.

Maple-leaved Goosefoot.

*Chenopodium hybridum* of Am. auth., not L. (G), (B & B).

Rich waste and cultivated ground. Indifferent. General.

*Chenopodium gigantospermum* var. *Standleyanum* Aellen in Fedde, Rep. Spec. Nov. 26: 147. 1929.

Waste ground. Indifferent. St. Louis Co.

*CHENOPODIUM ALBUM* L. Pigweed, Lamb's Quarter.

Waste and cultivated ground. Indifferent. General and common. The young shoots eaten as greens.

*CHENOPODIUM ALBUM* f. *VIRIDE* (L.) Aellen in Fedde, Rep. Spec. Nov. 26: 129. 1929.

*Chenopodium album* var. *viride* (L.) Moq., in part (G).

*Chenopodium album* L., in part (B & B).

Waste ground, in rich or moist soil. Indifferent. General.

*CHENOPODIUM ALBUM* f. *LANCEOLATUM* (Muhl.) Aellen in Fedde, Rep. Spec. Nov. 26: 130. 1929.

Waste and low alluvial ground. Sometimes found with the typical form. Scattered.

*CHENOPODIUM PAGANUM* Reichenb.

*Chenopodium album* var. *viride* (L.) Moq., in part (G).

*Chenopodium album* of auth., not L., in part (B & B).

Waste and cultivated ground. Indifferent. General but scattered.

- Chenopodium pratericola* Rydb. Bull. Torr. Bot. Club 39: 310. 1912.  
Waste and cultivated ground. Indifferent. Jackson Co.
- Chenopodium Berlandieri* Moq.  
Waste ground. Indifferent. General but scattered.
- Chenopodium Berlandieri* subsp. *Zschackei* var. *typicum* f. *latifolium* (Ludwig)  
Aellen in Fedde, Rep. Spec. Nov. 26: 55. 1929.  
Waste ground. Jackson Co.
- Chenopodium Berlandieri* subsp. *Zschackei* var. *typicum* f. *angustius* (Ludwig)  
Aellen in Fedde, Rep. Spec. Nov. 26: 55. 1929.  
Occasionally found with the other forms. Indifferent. Scattered: Jackson and Jasper, and probably in many other counties.
- Chenopodium Berlandieri* subsp. *Zschackei* var. *typicum* f. *pedunculare* Aellen  
in Fedde, Rep. Spec. Nov. 26: 55. 1929.  
Waste ground. Indifferent. Jackson Co.
- Chenopodium Berlandieri* subsp. *Zschackei* var. *typicum* f. *neglectum* Aellen, in  
Fedde, Rep. Spec. Nov. 26: 55. 1929.  
Waste ground. Indifferent. Jackson Co.
- Chenopodium Berlandieri* subsp. *Zschackei* var. *farinosum* Aellen in Fedde, Rep.  
Spec. Nov. 26: 56. 1929.  
Waste ground. Indifferent. Jackson Co.
- Chenopodium Berlandieri* subsp. *Zschackei* var. *foetens* (Ludwig) Aellen in  
Fedde, Rep. Spec. Nov. 26: 57. 1929.  
Waste ground. Indifferent. Jackson Co.
- Chenopodium Berlandieri* subsp. *Boscianum* (Moq.) Aellen in Fedde, Rep. Spec.  
Nov. 26: 51. 1929.  
*Chenopodium Boscianum* Moq. (G), (B & B).  
Woods and thickets. Indifferent. Southern and central Mo., scattered: St. Louis, Jackson, Greene, and Jasper counties.
- Chenopodium Standleyanum* Aellen in Fedde, Rep. Spec. Nov. 26: 153. 1929.  
*Chenopodium Boscianum* Moq., in part.  
Waste ground. Indifferent. Southern and western Mo.: Shannon, Holt, Jackson, Greene, and Jasper counties.
- Chenopodium missouriense* Aellen, Bot. Not. 1928: 206, figs. 1928.  
*Chenopodium paganum* Standley, N. Am. Fl. 21: 1. 1916, not Reichenb.  
Waste and cultivated ground. Indifferent. General, but scattered: St. Louis, Jackson, and Jasper counties, and probably in many others.
- Chenopodium missouriense* var. *Bushianum* Aellen in Fedde, Rep. Spec. Nov. 26: 156. 1929.  
Waste ground. Indifferent. Jackson Co.
- Chenopodium glaucophyllum* Aellen in Fedde, Rep. Spec. Nov. 26: 155. 1929.  
Waste ground. Indifferent. Jackson Co.
- Chenopodium Bushianum* Aellen in Fedde, Rep. Spec. Nov. 26: 63. 1929.  
Rocky open and waste ground. Indifferent. Western Mo.: Jackson, St. Clair, Greene, and Ozark counties.

*Chenopodium leptophyllum* Nutt.

Rocky or sandy open ground. Oxylophile. Western Mo.: Jackson and Jasper counties, and probably in many others.

*Chenopodium leptophyllum* var. *leptophylloides* (Murr.) Thellung & Aellen in Fedde, Rep. Spec. Nov. 26: 134. 1929.

*Chenopodium leptophyllum* var. *oblongifolium* Wats. (G).

*Chenopodium leptophyllum* Nutt. in part (B & B).

Waste and cultivated ground. Indifferent. General but scattered: St. Louis, Jackson, Jasper, and probably in many other counties.

*Chenopodium incanum* (Wats.) Heller.

Open waste ground. Indifferent. Introduced from the western plains. Jackson Co.

*Chenopodium dactyloides* Standley, N. Am. Fl. 21: 22. 1916.

Prairies and fields. Indifferent. Western Mo.: Atchison and Jackson counties.

## CHENOPODIUM MURALE L.

Waste ground and about dwellings. Indifferent. General but scattered: Warren, St. Louis, Texas, Boone, Jackson, Greene, Taney, and Jasper counties.

## CHENOPODIUM URBICUM L.

Waste ground, dumps, and about dwellings. Indifferent. General.

CHENOPODIUM URBICUM var. *INTERMEDIUM* (Mert. & Koch) Koch.

Commonly occurring with the typical form.

x *Chenopodium variable* var. *Murrii* Aellen in Fedde, Rep. Spec. Nov. 26: 157. 1929.

A supposed hybrid between *Chenopodium album* and *C. Berlandieri* subsp. *Zachackei* var. *typicum*.

Waste ground. Jackson Co.

## ATRIPLEX ROSEA L. Red Scale.

Waste and saline soil. Calciphile. Central Mo.: Howard and Jackson counties.

*Atriplex patula* L. Spear Scale.

Rich cultivated or waste ground. Indifferent. Northern and central Mo.: Knox, St. Louis, Putnam, and Jackson counties.

*Atriplex patula* var. *hastata* (L.) Gray.

Rocky or waste ground, and around saline springs and lies. Indifferent. Scattered: St. Louis, Callaway, Boone, Randolph, Jackson, and Jasper counties.

*Atriplex argentea* Nutt. Silver Scale.

Dry open ground. Indifferent. Introduced in Jackson Co.

*Monolepis Nuttalliana* (R. & S.) Wats.

Introduced in waste ground. Jackson Co.

## AXYRIS AMARANTOIDES L. See Rh. 29: 223. 1927.

Introduced in waste ground. Jackson Co.

*Corispermum nitidum* Kit. Bug-seed.

Sandy open ground. Oxylophile. Introduced in Jackson Co.

***Corispermum hyssopifolium* L.** Bug-seed.

Sand bars of the large rivers. Oxylophile. Scattered: St. Louis, Perry, Clay, and Jackson counties.

***Corispermum orientale* L. var. *emarginatum* (Rydb.) Macbride, Contr. Gray Herb. N. S. 53: 13. 1918.**

Sandy open ground. Oxylophile. Introduced in Jackson Co.

***Suaeda depressa* (Pursh) Wats.** Sea Blite.

Sandy open ground. Oxylophile. Introduced in Jackson Co.

***Salsola Kali* L.**

Open waste ground. Introduced in Jackson Co.

***SALSOLA KALI* var. *TENUIFOLIA* G. F. W. Mey.** Russian Thistle.

Dry or rocky open ground and waste places. Calciphile to circumneutral. Introduced from farther west. Scattered: St. Louis, St. Francois, Saline, Carroll, Atchison, Holt, Andrew, Buchanan, Platte, Clay, Jackson, and Jasper counties.

**Fam. AMARANTHACEAE*****Amaranthus Palmeri* Wats.**

Waste ground and along railroads. Indifferent. Introduced in Jackson Co.

***AMARANTHUS HYBRIDUS* L.** Pig-weed, Green Amaranth.

Fields, gardens, and waste ground. Indifferent. General and common. The young shoots eaten as greens.

***AMARANTHUS HYBRIDUS* var. *HYPOCHONDRIACUS* (L.) Robinson.** Prince's Feather.

Cultivated and rarely escaped. Scattered.

***AMARANTHUS RETROFLEXUS* L.** Pig-weed, Green Amaranth.

Cultivated and waste ground. Indifferent. General.

***AMARANTHUS PANICULATUS* L.** Purple Amaranth.

Escaped from gardens to roadsides and waste ground. Uncommon and scattered: St. Louis, Saline, and Jackson counties, and reported from Boone Co.

***Amaranthus graecizans* L.** Tumble-weed.

Fields, waste places, and rocky open ground. Indifferent. General.

***Amaranthus graecizans* var. *pubescens* Uline & Bray.**

Waste and cultivated ground. Occasionally growing with the typical form. Jackson Co.

***Amaranthus blitoides* Wats.** Spreading Pig-weed.

Waste and cultivated ground. Indifferent. General.

***AMARANTHUS SPINOSUS* L.** Spiny Amaranth.

Waste and cultivated ground. Indifferent. General.

***Acnida tuberculata* Moq.** Water Hemp.

Wet ground about sloughs, ponds, and streams. Circumneutral. Scattered, but commonest along the large rivers.

***Acnida tuberculata* var. *prostrata* (Uline & Bray) Robinson.**

Sand bars and mud flats along streams, and in waste ground. Circumneutral. Scattered: Pike, St. Louis, and Jackson counties.

*Acnida tuberculata* var. *subnuda* Wats.

Commonly occurring with the typical form.

*Acnida tamariscina* (Nutt.) Wood. Water Hemp.

Cultivated fields and waste ground, mostly in moist alluvial soil. Circumneutral. General.

*Cladanthrix lanuginosa* Nutt.

Introduced from the Southwest. Waste ground. Jackson Co.

*Iresine paniculata* (L.) Ktze. Blood-leaf, Juba's Bush.

Low wet woods and thickets. Central and southern Mo., scattered: St. Louis, Jefferson, Franklin, Ripley, Dent, Pulaski, Maries, Ozark, Jasper, Newton, and McDonald counties.

*Froelichia floridana* (Nutt.) Moq.

*Froelichia campestris* Small (B & B).

Sandy open ground and along railroads. Oxylophile. Eastern and central Mo., mostly near the larger rivers: Lewis, St. Louis, Madison, Scott, Mississippi, Dunklin, Butler, Reynolds, Boone, and Jackson counties.

*Froelichia gracilis* Moq.

Dry rocky ground and sandy barrens. Oxylophile. Eastern, central, and southern Mo.: Marion, Lincoln, St. Charles, St. Francois, Perry, Bollinger, Wayne, Dunklin, Howard, Moniteau, Jackson, and Jasper counties.

## Fam. PHYTOLACCACEAE

*Phytolacca americana* L. See Rh. 17: 180. 1915. Pokeweed, Pokeberry.

*Phytolacca decandra* L. (G).

Fields, roadsides, and waste ground. Indifferent. General and probably in every county. The young shoots eaten as greens by the country people, and the juice of the ripe berries formerly used as ink.

## Fam. NYCTAGINACEAE

*Oxybaphus nyctagineus* (Michx.) Sweet. Wild Four-o'clock.

*Allionia nyctaginea* Michx. (B & B).

Open and waste ground. Circumneutral. General.

*Oxybaphus floribundus* Choisy. Umbrella-wort.

Rocky open slopes and glades. Calciphile. General but scattered: Clark, St. Louis, Jefferson, Wayne, Ripley, Dent, Holt, Carroll, Jackson, and Jasper counties.

*Oxybaphus hirsutus* (Pursh) Sweet.

Dry open ground and glades. Circumneutral. Scattered: Nodaway, Boone, Ozark, and Jackson counties.

*Oxybaphus hirsutus* var. *integrifolius* Choisy.

*Oxybaphus pilosus* (Nutt.) Sweet.

Glades and rocky open ground. Calciphile. Southwestern Mo.: McDonald Co.

**Oxybaphus albidus** (Walt.) Sweet. Umbrella-wort.*Allionia albida* Walt. (B & B).*Allionia bracteata* Rydb. (R).*Allionia lanceolata* of Standley, not Rydb.

Rocky open woods, prairies, glades, and open ground. Calciphile to circumneutral. General: Holt, Worth, Gentry, Dekalb, St. Louis, Warren, Montgomery, Mississippi, Stoddard, Ripley, Shannon, Maries, Crawford, Dent, Phelps, Pulaaki, Boone, Clinton, Jackson, Dallas, Polk, Hickory, Laeade, Johnson, Henry, Greene, Ozark, Vernon, Jasper, and McDonald counties.

**Oxybaphus linearis** (Pursh) Robinson.*Allionia linearis* Pursh (B & B).*Oxybaphus Bushii* Britton.

Rocky prairies and glades. Calciphile. Central and southern Mo.: St. Louis, Ste. Genevieve, Washington, Boone, Pulaski, Wright, Taney, Jackson, Benton, Jasper, Newton, and Barry counties.

## Fam. ILLECEBRACEAE

**Anychia polygonoides** Raf. Forked Chickweed.

Rocky open woods and glades. Oxylophile. General: Mercer, Sullivan, Linn, Randolph, Shelby, Monroe, Audrain, Boone, Lincoln, St. Louis, Jefferson, St. Francois, Mississippi, Pemiscot, Dunklin, Ripley, Oregon, Carter, Shannon, Reynolds, Iron, Dent, Texas, Phelps, Pulaski, Maries, Miller, Camden, Laeade, Hickory, Dallas, Greene, Ozark, Jackson, Henry, Cedar, Jasper, Newton, and McDonald counties.

**Anychia canadensis** (L.) BSP.

Dry open woods. Oxylophile to circumneutral. General: Schuyler, Putnam, Sullivan, Knox, Shelby, Ralls, Boone, Warren, St. Louis, Jefferson, Ste. Genevieve, St. Francois, Bollinger, Wayne, Ripley, Shannon, Reynolds, Dent, Phelps, Howell, Douglas, Taney, Christian, Dallas, Webster, Greene, Hickory, Dekalb, Clinton, Jackson, Johnson, Vernon, Jasper, McDonald, and Barry counties.

## Fam. AIZOACEAE

**MOLLUGO VERTICILLATA** L. Carpet-weed.

Waste and cultivated ground. Indifferent. General and common.

**Geocarpon minimum** Mack. Torreyia 14: 67. 1914.

Sandy barrens. Oxylophile. Rare and local: Jasper Co.

## Fam. CARYOPHYLLACEAE

**SPERGULA ARVENSIS**. Corn Spurrey.

Waste and cultivated ground. Indifferent. Scattered: Jackson, Greene, and Jasper counties.

**Sagina decumbens** (Ell.) T. & G. Pearlwort.

Waste ground, fallow fields, and rocky open or sandy ground, usually in alluvial or sandy soils. Oxylophile to circumneutral. Central and southern Mo.: Boone, Callaway, St. Louis, Jefferson, Franklin, Ste. Genevieve, St. Francois, Bollinger, Madison, Dunklin, Butler, Ripley, Oregon, Reynolds, Wayne,



Dent, Shannon, Texas, Osage, Phelps, Maries, Pulaaki, Miller, Camden, Dallas, Laclede, Polk, Webster, Henry, Douglas, Greene, Cedar, Saline, Vernon, Jasper, and Newton counties.

*ARENARIA SERPYLLIFOLIA* L. Thyme-leaved Sandwort.

Sandy or rocky soil, glades, fields, ledges, and open places. Calciphile to circumneutral. General and common.

*Arenaria patula* Michx. Sandwort.

Glades and rocky prairies. Calciphile to circumneutral. Central and southern Mo.: Boone, Callaway, St. Louis, Jefferson, Franklin, Gasconade, Osage, Washington, St. Francois, Ste. Genevieve, Perry, Iron, Reynolds, Dunklin, Ripley, Oregon, Shannon, Maries, Texas, Phelps, Pulaaki, Laclede, Camden, Miller, Cole, Hickory, Greene, Wright, Webster, Douglas, Christian, Taney, Ozark, Stone, Polk, Dade, St. Clair, Cedar, Barry, Jackson, Vernon, Jasper, Newton, and McDonald counties.

*Arenaria stricta* Michx. var. *texana* Robinson. Rock Sandwort.

Rocky slopes, ledges along bluffs, and glades. Calciphile to circumneutral. Eastern, central, and southern Mo.: Monroe, Lincoln, Jefferson, St. Francois, Washington, Boone, Camden, Texas, Greene, Christian, and McDonald counties.

*Stellaria pubera* Michx. var. *silvatica* (Béguinot) Weatherby, Rh. 26: 171. 1924. Great Chickweed.

*Aleine pubera* (Michx.) Britton, in part (B & B).

Shaded slopes along bluffs. Circumneutral. Eastern Mo., local: Franklin Co.

*STELLARIA MEDIA* (L.) Cyrill. Chickweed.

*Aleine media* L. (B & B).

Waste ground, lawns, and cultivated ground. Indifferent. General.

*Stellaria longifolia* Muhl. Long-leaved Stitchwort.

*Aleine longifolia* (Muhl.) Britton (B & B).

Low open woods and moist meadows. Circumneutral. Eastern Mo.: Scotland, St. Louis, Jefferson, Madison, and Cape Girardeau counties.

*STELLARIA GRAMINEA* L. Narrow-leaved Stitchwort.

*Aleine graminea* (L.) Britton (B & B).

Lawns, meadows, and waste ground. Indifferent. Introduced in Boone Co.

*CERASTIUM VULGATUM* L. var. *HIRSUTUM* Fries. See Rh. 22: 178. 1920. Mouse-ear, Chickweed.

*Cerastium vulgatum* of auth., not L. (G), (B & B).

Waste and cultivated ground, and moist meadows. Indifferent. General and common.

*Cerastium brachypodium* (Engelm.) Robinson.

Rich open woods, rocky slopes, moist meadows, waste and cultivated ground. Circumneutral. Commonest in eastern, central, and southern Mo. and locally north in Schuyler and Atchison counties.

*Cerastium nutans* Raf. Nodding Chickweed.

Moist meadows, rich rocky woods, cultivated and waste ground. Indifferent. General.

**CERASTIUM VISCOSUM L.** Clammy Chickweed.

Moist alluvial and cultivated ground, and wet rocky woods. Oxylophile to circumneutral. General.

**Cerastium arvense L. var. oblongifolium (Torr.) Hollick & Britton.**

Low wet ground, and on moist siliceous or granitic rocks. Oxylophile. Eastern Mo., south of Missouri River: St. Louis, Jefferson, St. Francois, Ste. Genevieve, Madison, Iron, and Wayne counties.

**AGROSTEMMA GITHAGO L.** Corn Cockle.

Cultivated and waste ground, and along roadsides and railroads. Indifferent. General.

**DIANTHUS DELTOIDES L.** Maiden Pink.

Introduced in waste ground. Franklin Co.

**DIANTHUS ARMERIA L.** Deptford Pink.

Rocky open woods, sandy open and waste ground. Oxylophile to circumneutral. Central and southern Mo. south and east of a line from Lincoln, Montgomery, Boone, and Henry counties to McDonald Co.

**DIANTHUS BARBATUS L.** Sweet William.

Cultivated and rarely escaped to roadsides and waste ground. Jasper Co.

**LYCHNIS ALBA Mill.** White Campion.

Waste and cultivated ground. Indifferent. Scattered: Harrison, Marion, Lincoln, Warren, St. Louis, Franklin, Bollinger, Pulaski, Howell, Texas, Boone, Saline, Clay, Jackson, and Jasper counties.

**LYCHNIS DIOICA L.** Red Campion.

Escaped into waste ground. Jackson Co. This has sometimes been mistaken for *Silene noctiflora*.

**Silene antirrhina L.** Sleepy Catchfly.

Field, open woods, and cultivated and waste ground. Indifferent. General.

**Silene antirrhina var. divaricata Robinson.**

Occasionally occurring with the typical form. Holt and Jackson counties.

**Silene nivea (Nutt.) Otth.**

Moist or wet banks of streams, and also introduced in waste ground and along railroads. Circumneutral. Northern and central Mo.: Sullivan, Boone, and Audrain counties.

**SILENE LATIFOLIA (Mill.) Britten & Rendle.** Bladder Campion.

Introduced in Platte and Jackson counties.

**SILENE NOCTIFLORA L.** Night-flowering Catchfly.

Waste and cultivated ground. Indifferent. Scattered: St. Louis, Franklin, Boone, Saline, and Jasper counties.

**SILENE GALLICA L.**

Old fields and waste ground. Indifferent. Cape Girardeau and Jackson counties.

**Silene virginica L.** Indian Pink, Fire Pink.

Rocky woods and along moist cliffs and banks. Oxylophile to circumneutral. East-central and southern Mo., mostly in the Ozark region: Montgomery, Jefferson, Ste. Genevieve, St. Francois, Washington, Crawford, Bollinger, Madison,

Wayne, Carter, Butler, Iron, Reynolds, Shannon, Dent, Oregon, Howell, Texas, Wright, Webster, Greene, Douglas, Ozark, Taney, Stone, Barry, and McDonald counties.

*Silene regia* Sims. Royal Catchfly.

Rocky prairies, rocky open woods, and thickets. Circumneutral. East-central and southern Mo., Ozark region: St. Louis, Jefferson, Franklin, Washington, Crawford, Dent, Shannon, Texas, Phelps, Pulaski, Maries, Miller, Cole, Greene, Barry, Jasper, and McDonald counties.

*Silene stellata* (L.) Ait. f. Starry Campion.

Rich upland woods and thickets. Circumneutral. General.

*Silene Wherryi* Small, *Torreyia* 26: 66, fig. 1926.

Rocky chert woods and bluffs. Oxylophile to circumneutral. Central Ozark region, southern Mo.: Phelps, Dent, Texas, Shannon, Pulaski, Laclede, and Douglas counties.

*Silene Wherryi* × *virginica*.

Rocky chert woods, growing with the parent species. Local: Shannon Co.

*SAPONARIA OFFICINALIS* L. Bouncing Bet, Soapwort.

Cultivated in old gardens and freely escaped into fields, gravel bars, and waste ground, and along roadsides and railroads. Indifferent. General.

*SAPONARIA VACCARIA* L. Cow-herb.

Open waste ground, and along railroads and roadsides. Indifferent. Scattered: Marion, Ralls, Greene, Jackson, and Jasper counties.

### Fam. PORTULACACEAE

*Claytonia virginica* L. Spring Beauty.

Rich or rocky woods and prairies. Circumneutral. General.

*Claytonia virginica* f. *robusta* (Somes) Palmer & Steyermark, comb. nov.

*Claytonia multicaulis* var. *robusta* Somes.

*Claytonia robusta* (Somes) Rydb.

Occasionally found with the typical form, growing in rich woods. Circumneutral. Scattered: Ste. Genevieve, Madison, Boone, Cooper, Jackson, Douglas, and Jasper counties.

*Talinum parviflorum* L.

Glades and barrens. Oxylophile, usually on sandstone or chert and occasionally on leached limestone. Southern Mo.: St. Charles, St. Louis, Jefferson, Ste. Genevieve, Madison, Shannon, Texas, Polk, Greene, Cedar, Dade, Lawrence, Vernon, Jasper, and Newton counties.

*Talinum calycinum* Engelm. Rock Pink, Flame Flower.

Glades and exposed rocky ledges. Oxylophile to circumneutral; usually found on sandstone, chert, or granitic rocks, but occasionally on limestone. Central and southern Mo.: Montgomery, Lincoln, St. Louis, Jefferson, Franklin, St. Francois, Ste. Genevieve, Madison, Iron, Ripley, Shannon, Texas, Gasconade, Wright, Laclede, Pulaski, Maries, Miller, Dallas, Cooper, Benton, Polk, Hickory, St. Clair, Cedar, Greene, Ozark, Taney, Stone, Barry, Jackson, Vernon, Jasper, and Newton counties.

**PORTULACA OLERACEA** L. Purslane, Pursley.

Cultivated and waste ground. Indifferent. General and common.

**Portulaca neglecta** Mack. & Bush.

Rich alluvial fields and prairies. Western Mo.: Jackson, Johnson, and Jasper counties.

**Portulaca retusa** Engelm. Notched Purslane.

Limestone and chert glades. Oxylophile to circumneutral. Southwestern Mo.: Jasper and Newton counties.

**Portulaca parvula** Gray. See N. Am. Fl. 21: 334. 1922.

*Portulaca pilosa* of auth., not L. (G), (B & B).

Rocky prairies and glades. Oxylophile to circumneutral. Western Mo., south of Missouri River: Jackson, Polk, Greene, Barton, Jasper, and Newton counties.

**PORTULACA GRANDIFLORA** Hook. Portulaca, Rose Moss.

Common in cultivation and occasionally escaped into waste or open ground.

**Fam. CERATOPHYLLACEAE****Ceratophyllum demersum** L. Hornwort.

Sloughs, sluggish streams, and ponds. Circumneutral. General but scattered: St. Charles, St. Louis, Perry, Dunklin, Reynolds, Oregon, Pulaski, Texas, Boone, Saline, Jackson, Barton, and Jasper counties.

**Fam. NYMPHAEACEAE****Nymphoanthus advena** (Ait.) Fernald, Rh. 21: 186. 1919. Spatter Dock, Yellow Pond-lily.

*Nymphaea advena* Ait. (G), (B & B).

Ponds, sloughs, and slow streams. General but scattered: Lincoln, St. Charles, St. Louis, Jefferson, Franklin, Dunklin, Butler, Laclede, Bates, Vernon, Barton, Jasper, and Newton counties.

**Nymphoanthus ozarkanus** (Miller & Standley) Palmer & Steyermark, comb. nov.

*Nymphaea ozarkana* Miller & Standley, Contr. U. S. Nat. Herb. 16: 91. 1912.

Ponds, sloughs, and streams. Circumneutral. Southern Mo., mostly in the eastern Ozark region: Washington, Dent, Iron, Reynolds, Carter, Ripley, Oregon, Shannon, Texas, Howell, Douglas, Dallas, Greene, and Taney counties.

**Nymphaea tuberosa** Paine, See Rh. 18: 120. 1916. Tuberous Water-lily.

*Castalia tuberosa* (Paine) Greene (G), (B & B).

Slow streams and ponds. Circumneutral. Eastern Mo., scattered: St. Louis and Dunklin counties.

**Nymphaea odorata** Ait. Water-lily, sweet-scented Water-lily.

*Castalia odorata* (Ait.) Woodville & Wood (G), (B & B).

Ponds and sloughs. Circumneutral. Scattered: St. Louis, Butler, Boone, Ray, Vernon, Barton, and Jasper counties. Often cultivated and escaped in places.

**Nelumbo pentapetala** (Walt.) Fernald, Rh. 36: 23-24. 1934. Yanguapin, Water Chinquapin, Yellow Lotus.

*Nelumbo lutea* (Willd.) Pers. (G), (B & B).

Lakes, ponds, and sloughs. Circumneutral. General but scattered: Harrison, Adair, Audrain, Boone, Lincoln, St. Charles, St. Louis, Stoddard, Dunklin, Carter, Shannon, Phelps, Laclede, Camden, Webster, Greene, Dade, Buchanan, Platte, Jackson, Cass, Bates, Barton, Jasper, and Newton counties.

*NELUMBO NUCIFERA* Gaertn. Oriental Lotus.

Introduced in a lake in Iron Co.

*Cabomba caroliniana* Gray. Carolina Water-shield.

Swamps and sloughs. Circumneutral. Eastern Mo.: St. Charles, St. Louis, Wayne, Dunklin, and Butler counties.

*Brasenia Schreberi* Gmel. Water-shield.

Ponds and sloughs. Circumneutral. East-central and southern Mo., scattered: Audrain, St. Charles, St. Louis, St. Francois, Iron, Texas, Taney, Barton, and Jasper counties.

### Fam. RANUNCULACEAE

*Ranunculus aquatilis* L. var. *capillaceus* DC. White Water Crowfoot.

Sloughs, ponds, and streams. Circumneutral. Central and southern Mo.: St. Louis, Crawford, Butler, Ripley, Oregon, Shannon, Pulaski, Howell, Laclede, Dallas, Greene, Jackson, Jasper, and Newton counties.

*Ranunculus longirostris* Godron.

Ponds. Circumneutral. Local: St. Louis Co.

*Ranunculus delphinifolius* Torr. Yellow Water Crowfoot.

*Ranunculus delphinifolius* var. *terrestris* (Gray) Farwell, a mere terrestrial state of the above.

Swamps, bayous, ponds, and streams, in shallow water or on muddy banks. Circumneutral. Scattered, mostly near the larger rivers and absent from most of the Ozark region: Shelby, Ralls, St. Charles, St. Louis, Jefferson, Madison, Bollinger, Scott, Dunklin, Butler, Livingston, Buchanan, and Jackson counties.

*Ranunculus cymbalaria* Pursh f. *hebecaulis* Fernald, Rh. 16: 162. 1914. Seaside Crowfoot.

Sand bars and sandy open ground. Calciphile to circumneutral. Western Mo., northward from the Missouri River: Holt, Clay, and Jackson counties.

*Ranunculus laxicaulis* (T. & G.) Darby. Water Plantain Spearwort.

Moist open ground and borders of sloughs and ditches. Circumneutral. Scattered: Montgomery and Greene counties.

*Ranunculus oblongifolius* Ell. Spearwort.

Low wet woods and swamps. Oxylophile to circumneutral. East-central and southern Mo.: St. Charles, St. Louis, Jefferson, Mississippi, New Madrid, Dunklin, Howell, Butler, Webster, Greene, Barton, and Jasper counties.

*Ranunculus pusillus* Poir.

Swamps and low wet woods. Circumneutral. Eastern Mo., south of the Missouri River: St. Louis, Iron, Mississippi, New Madrid, Dunklin, Butler, and Texas counties.

*Ranunculus sceleratus* L. Cursed Crowfoot.

Moist alluvial open ground and sand bars. Northern and central Mo., mostly

near the larger rivers: Marion, Montgomery, St. Charles, St. Louis, Ste. Genevieve, Boone, Howard, Saline, Gentry, Holt, Platte, Jackson, and Vernon counties.

***Ranunculus micranthus* Nutt.**

Open rocky woods, and moist or alluvial open ground. Circumneutral. Eastern, central, and southern Mo.: Adair, Pike, St. Louis, Jefferson, Franklin, St. Francois, Oregon, Shannon, Crawford, Phelps, Howell, Boone, Moniteau, Montgomery, Clay, Jackson, Greene, Taney, Barry, Jasper, Newton, and McDonald counties.

***Ranunculus abortivus* L. Small-flowered Crowfoot.**

Moist alluvial or rocky woods, and open or waste ground. Circumneutral. General.

***Ranunculus Harveyi* (Gray) Britton.**

Rocky open woods and ledges. Oxylophile to circumneutral. Central and southern Mo.: Montgomery, Gasconade, Osage, St. Louis, Jefferson, Washington, Franklin, Crawford, Dent, Madison, Wayne, Iron, Reynolds, Carter, Maries, Phelps, Pulaaki, Texas, Camden, Dallas, Laclede, Greene, Barry, and McDonald counties.

***Ranunculus Harveyi* f. *pilosus* (Benke) Palmer & Steyermark, comb. nov.**

*Ranunculus Harveyi* var. *pilosus* Benke, Rh. 30: 200. 1928.

Sometimes occurring with the typical form, but scarcely distinct enough to deserve varietal rank.

***Ranunculus recurvatus* Poir. Hooked Crowfoot.**

Rich or rocky open woods. Circumneutral. General.

***Ranunculus fascicularis* Muhl. Prairie Buttercup.**

Rocky prairies, open woods, banks, and glades. Circumneutral to oxylophile. General.

***Ranunculus septentrionalis* Poir. Swamp Buttercup.**

Rich or wet woods, and borders of sloughs and ponds. Circumneutral. General.

***Ranunculus caricetorum* Greene.**

*Ranunculus sicaeformis* Mack. & Bush.

Low wet prairies. Circumneutral. Local: Jackson Co. Similar to the last and perhaps not specifically distinct.

***Ranunculus hispidus* Michx.**

Rocky open woods. Circumneutral to oxylophile. General but commonest in the Ozark region: Marion, St. Louis, Jefferson, Franklin, Bollinger, Iron, Wayne, Ripley, Shannon, Texas, Warren, Boone, Cole, Morgan, Camden, Howell, Greene, Webster, Douglas, Christian, Stone, Barry, Platte, Jackson, Jasper, Newton, and McDonald counties.

***Ranunculus hispidus* var. *falsus* Fernald, Rh. 22: 30. 1920.**

Sometimes found with the typical form.

***RANUNCULUS REPENS* L. See Rh. 21: 169. 1919. Creeping Buttercup.**

Low wet woods and open ground. Circumneutral. Local: St. Louis Co.



**RANUNCULUS PARVIFLORUS L.**

Swampy woods and open ground. Oxylophile. Southeastern Mo.: Butler and Dunklin counties.

**RANUNCULUS ACRIS L.** Meadow Buttercup.

Meadows and waste ground. Circumneutral. Introduced in St. Louis and Jackson counties.

**Myosurus minimus L.** Mouse-tail.

Low open woods and moist fields. Circumneutral. General.

**Trautvetteria carolinensis (Walt.) Vail.** False Bugbane.

Moist limestone bluffs. Calciphile. Rare and local: Shannon Co.

**Thalictrum dioicum L.** Early Meadow Rue.

Rich rocky woods and ledges along shaded bluffs. Circumneutral to calciphile. General, but scattered: Adair, St. Louis, Jefferson, Franklin, Carter, Reynolds, Shannon, Oregon, Howell, Morgan, Jackson, Benton, and Stone counties.

**Thalictrum dasycarpum Fisch. & Lall.** Meadow Rue.

Rich or rocky woods, and moist open ground. Circumneutral. General.

**Thalictrum revolutum DC.**

Rich or rocky woods. Circumneutral. General but less common than the last species.

**Anemonella thalictroides (L.) Spach.** Rue Anemone.

Rich or rocky woods. Circumneutral. General.

**Hepatica americana (DC.) Ker.** See Rh. 19: 45. 1927. Hepatica, Liver-leaf.

*Hepatica triloba* of Am. auth., not Chaix. (G).

*Hepatica Hepatica* (L.) Karst. (B & B).

Rocky hillside woods and bluffs. Oxylophile to circumneutral. Southern Mo.; Iron, Reynolds, Dent, Shannon, Oregon, Howell, Texas, Wright, Douglas, Ozark, Webster, Greene, Christian, Taney, Stone, and Barry counties.

**Hepatica americana f. candida Fernald, Rh. 19: 46. 1917.**

Commonly found throughout the range of the typical form in Missouri.

**Hepatica acutiloba DC.** Hepatica, Liver-leaf.

Rocky hillside woods and bluffs. Calciphile to circumneutral. Eastern and middle Missouri: Schuyler, Adair, Clark, Marion, Pike, Boone, Callaway, Warren, Montgomery, St. Charles, St. Louis, Jefferson, Franklin, Crawford, Washington, St. Francois, Ste. Genevieve, Perry, Bollinger, Cape Girardeau, Iron, Wayne, Carter, Reynolds, and Shannon counties.

**Hepatica acutiloba f. albiflora Hoffmann, Proc. Bost. Soc. Nat. Hist. 36: 268. 1922.**

Commonly found throughout the range of the typical form in Mo.

**Hepatica acutiloba f. rosea Hoffmann, Proc. Bost. Soc. Nat. Hist. 36: 268. 1922.**

Commonly found throughout the range of the typical form in Mo.

**Anemone caroliniana Walt.** Prairie Anemone.

Prairies, meadows, glades, waste ground, and along roadsides. Circumneutral. Western and middle Mo.: Boone, Pulaski, Morgan, Dallas, Johnson, Henry, St. Clair, Cedar, Lawrence, Barry, Jackson, Cass, Bates, Vernon, Barton, Greene, Jasper, Newton, and McDonald counties.

**Anemone cylindrica** Gray. Thimbleweed.

Prairies and open woods. Circumneutral to calciphile. Northwestern and west-central Mo.: Atchinson, Nodaway, Holt, and Jackson counties.

**Anemone virginiana** L. Thimbleweed.

Prairies and open woods. Circumneutral. General.

**Anemone virginiana** f. *leucosepala* Fernald, Rh. 19: 140. 1917.

In similar situations to the typical form. Found throughout the range of the species in Mo.

**Anemone canadensis** L. White Anemone.

Low open woods and meadows. Circumneutral. Northern, central, and eastern Mo., mainly near the larger rivers: Clark, Marion, St. Louis, Jefferson, Franklin, Ste. Genevieve, Madison, Butler, Boone, Saline, Atchison, Holt, Andrew, Platte, Clay, and Jackson counties.

**Clematis virginiana** L. Virgin's Bower.

Woods and thickets along streams. Circumneutral. General.

**Clematis virginiana** var. *missouriensis* (Rydb.) Palmer & Steyermark, comb. nov. *Clematis missouriensis* Rydb. (G), (B & B).

Rocky woods and thickets along streams. Circumneutral. Central, southern, and western Mo.: Scott, Butler, Shannon, Maries, Cole, Saline, Gentry, Douglas, Greene, Christian, Taney, Stone, Barry, Jasper, and McDonald counties.

**Clematis Viorna** L. Leather Flower.

Rich woods and bluffs. Circumneutral. Southern Mo.: Bollinger and Taney counties.

**Clematis versicolor** Small.

Rocky woods and bluffs. Circumneutral. Southern Mo.: Oregon, Ozark, Taney, Greene, Stone, Barry, and McDonald counties.

**Clematis Pitcheri** T. & G. Leather Flower, Bluebell.

*Viorna Pitcheri* (T. & G.) Britton (B & B).

Thickets and rocky woods. Circumneutral to calciphile. General.

**Clematis crispa** L. Swamp Leather Flower.

Low wet woods and borders of swamps. Circumneutral. Southern Mo.: Scott, Mississippi, Pemiscot, Dunklin, Stoddard, Butler, Ripley, Ozark, and Newton counties.

**Clematis Fremontii** Wats.

Limestone glades. Calciphile. Eastern Mo., south of the Missouri River: St. Louis, Jefferson, Franklin, St. Francois, and Washington counties.

**Isopyrum bternatum** (Raf.) T. & G. False Rue Anemone.

Rich woods. Circumneutral to calciphile. General.

**Aquilegia canadensis** L. Wild Columbine.

*Aquilegia coccinea* Small (8).

Shaded rich woods, rocks and bluffs; usually on limestone. Calciphile to circumneutral. General.

**Aquilegia canadensis** var. *flaviflora* (Tenney) Britton.

Occasionally occurring with the species. Northwestern Mo., local: Buchanan Co.

**DELPHINIUM AJACIS** L. Larkspur.

Commonly cultivated in old gardens and often escaping. General.

**Delphinium tricornis** Michx. Dwarf Larkspur.

Rocky woods and thickets. Circumneutral. General.

**Delphinium Treleasei** Bush. Glade Larkspur.

Glades and rocky slopes of bald knobs. Calciphile. Southwestern Mo.: Greene, Taney, Stone, and Barry counties.

**Delphinium azureum** Michx.

Rocky open woods, glades, and prairies. Calciphile to circumneutral. Central and southern Mo.: Franklin, Crawford, Dent, Shannon, Carter, Phelps, Pulaski, Maries, Cole, Texas, Howell, Laclede, Wright, Webster, Taney, Miller, Douglas, Ozark, Greene, and Barry counties. This species and *Delphinium Penardi* intergrade in color considerably.

**Delphinium azureum** var. **Nortonianum** (Mack. & Bush) Palmer & Steyermark, comb. nov.

*Delphinium Nortonianum* Mack. & Bush (G).

Rocky upland open woods, glades, and prairies. Oxylophile to circumneutral. Southern Mo.: Crawford, Carter, Shannon, Oregon, Texas, Howell, Douglas, Ozark, Stone, Taney, Wright, Barry, and McDonald counties. The characters upon which *Delphinium Nortonianum* were based have been found to merge with typical *Delphinium azureum* in certain degrees, and it appears best treated as a variety of the latter species.

**Delphinium Penardi** Huth. Prairie Larkspur.

*Delphinium camporum* Greene (B & B).

Rocky prairies and glades. Circumneutral. Northern, central, and southwestern Mo., apparently absent from much of the Ozark region and from the Southeastern lowlands: Clark, Adair, Macon, Linn, Ralls, Lincoln, St. Louis, Boone, Saline, Miller, Camden, Laclede, Dallas, Atchison, Grundy, Daviess, Caldwell, Jackson, Cass, Bates, Vernon, Henry, St. Clair, Greene, Webster, Stone, Dade, Lawrence, Barry, Jasper, Newton, and McDonald counties.

**Cimicifuga racemosa** (L.) Nutt. Bugbane, Black Snakeroot.

Rocky woods and bluffs. Circumneutral to oxylophile. East-central and southern Mo.: St. Louis, St. Francois, Bollinger, Madison, Dent, Iron, Wayne, Reynolds, Carter, Butler, Ripley, Oregon, Shannon, Howell, Texas, Wright, Webster, Greene, Douglas, Ozark, Stone, Barry, and Jasper counties.

**Actaea brachypoda** Ell. White Baneberry.

*Actaea alba* (L.) Mill. (G), (B & B).

Rich woods and banks of small streams. Circumneutral. Eastern, middle, and southern Mo., and locally in northwestern Mo.: Schuyler, Adair, Clark, Marion, Boone, Warren, St. Louis, Jefferson, Franklin, St. Francois, Perry, Scott, Stoddard, Shannon, Texas, Dent, Crawford, Phelps, Pulaski, Camden, Laclede, Atchison, Greene, and Barry counties.

**Hydrastis canadensis** L. Golden Seal.

Rich woods and thickets. Circumneutral. Central and southern Mo.: well distributed but nowhere common: St. Louis, Jefferson, Franklin, St. Francois, Iron, Bollinger, Dunklin, Ripley, Carter, Shannon, Texas, Phelps, Miller, Cole, Boone, Saline, Jackson, Johnson, Polk, Greene, Taney, Lawrence, Barry, and Jasper counties.

## Fam. MAGNOLIACEAE

**Magnolia acuminata** L. Cucumber Tree.

Low hills and rocky bluffs. Circumneutral. Southern Mo.: Cape Girardeau, Scott, Stoddard, Dunklin, Butler, and Ozark counties.

**Magnolia acuminata** var. **ozarkensis** Ashe, Jour. Elisha Mitchell Sci. Soc. 41: 269, 1926.

Along rocky bluffs. Circumneutral. Southwestern Mo.: Barry Co.

**Liriodendron Tulipifera** L. Tulip Tree, Yellow Poplar.

Upland woods and along small streams. Circumneutral. Southeastern Mo.: Perry, Cape Girardeau, Bollinger, Scott, Mississippi, Dunklin, Stoddard, and Butler counties.

## Fam. ANNONACEAE

**Asimina triloba** Dunal. Papaw.

Rich woods and along bluffs and streams. Circumneutral. General.

## Fam. MENISPERMACEAE

**Cocculus carolinus** (L.) DC. Fishberry.

Rocky woods and thickets. Circumneutral. Southern Mo., and locally northward along the large rivers: Marion, Ralls, Cole, Iron, Reynolds, Wayne, Mississippi, Dunklin, Ripley, Oregon, Shannon, Howell, Ozark, Douglas, Taney, Stone, Barry, Greene, Cedar, Vernon, Barton, Jasper, Newton, and McDonald counties.

**Menispermum canadense** L. Moonseed, Yellow-root.

Moist woods and thickets. Circumneutral. General.

**Calycocarpum Lyoni** (Pursh) Nutt. Cup-seed.

Thickets and low alluvial fields. Circumneutral. East-central and southern Mo.: St. Louis, Jefferson, Franklin, Madison, Scott, Mississippi, Stoddard, Dunklin, Ripley, Carter, Oregon, Dent, Shannon, Pulaski, Douglas, Ozark, Taney, Stone, Cedar, Barry, Jasper, Newton, and McDonald counties.

## Fam. BERBERIDACEAE

**Podophyllum peltatum** L. May Apple, Mandrake.

Open woods and thickets. Circumneutral to calciphile. General.

**Caulophyllum thalictroides** (L.) Michx. Blue Cohosh.

Rich woods and moist banks along bluffs. Circumneutral to calciphile. General but uncommon: Mercer, Schuyler, Marion, Boone, Warren, St. Louis, Jefferson, Franklin, Shannon, Texas, Howell, Phelps, Pulaski, Camden, Laclede, Ozark, Greene, Clay, Jackson, and Jasper counties.

**Berberis canadensis** Mill. American Barberry.

Rocky woods and bluffs, on limestone and sandstone. Oxylophile. Southeastern Mo., local: Shannon, Texas, and Howell counties.

**Berberis vulgaris** L. European Barberry.

Cultivated and rarely escaped into pastures and open woods. Clark and Marion Counties.

*Berberis thunbergii* DC. Japanese Barberry.

Cultivated and rarely escaped into open woods and open ground. Marion Co.

### FAM. LAURACEAE

*Sassafras officinale* Nees & Eberm. *Sassafras*.

*Sassafras variifolium* (Salisb.) Ktze. (G).

*Sassafras Sassafras* (L.) Karst. (B & B).

Borders of woods and thickets, dry or sterile soil. Oxylophile to circumneutral. Eastern, central, and southern Mo.; south of a line drawn from Marion to Lafayette and Cass counties.

*Sassafras officinale* var. *albidum* (Nutt.) Blake, Rh. 20: 99. 1918.

Similar situations and range to those of the typical form, but less common.

*Benzoin aestivale* (L.) Nees. Spice Bush.

Woods and thickets, in moist alluvial or rocky soil. Circumneutral. Central and southern Mo.; commonest in the Ozark region.

*Benzoin aestivale* var. *pubescens* Palmer & Steyermark, var. nov.

Similar situations to the last. Circumneutral. Central and southern Mo.: Montgomery, St. Louis, Jefferson, New Madrid, Stoddard, Iron, Shannon, Dent, Ozark, Moniteau, Morgan, Hickory, Stone, Jasper, Newton, and McDonald counties.

A typo recedit ramulis annotinis pubescentibus; foliis subtus ad nervos petiolosque pubescentibus margine ciliatis.

Differs from the typical form in the pubescent young branchlets and in the leaves, which are more or less pubescent, at least along the veins beneath, ciliate on the margins, and with pubescent petioles.

South Carolina, Georgia, Alabama, Mississippi, Louisiana, Tennessee, Kentucky, southern Illinois, and central and southern Missouri, to southeastern Kansas, Oklahoma, and eastern Texas. The occurrence of this undescribed pubescent variety throughout a large area has been the cause of considerable confusion and has been responsible for the wide range given in manuals to *Benzoin melissae-folium* (Walt.) Nees, which has been credited to Missouri, but which appears to be a rare species confined to the coastal plain and Piedmont regions of the southeastern states.

MISSOURI: Alba, Jasper Co., Sept. 12, 1922, E. J. Palmer 21923 (Arn. Arb. TYPE).

### FAM. PAPAVERACEAE

*Sanguinaria canadensis* L. Bloodroot.

Rocky woods and moist rich ground along bluffs. Circumneutral to calciphile. General.

*Sanguinaria canadensis* var. *rotundifolia* (Greene) Fedde.

Wooded hillsides and bluffs along the Missouri River. Circumneutral to calciphile. Northwestern Mo., local: Atchison Co.

*CHELIDONIUM MAJUS* L. Celandine.

Introduced in waste ground. Jackson Co.

**Stylophorum diphyllum** (Michx.) Nutt. Celandine Poppy.

Rocky woods, rich ground, and bluffs. Circumneutral. East-central and southern Mo., mostly in the eastern Ozark region: Warren, St. Charles, St. Louis, Jefferson, Washington, St. Francois, Madison, Stoddard, Wayne, Carter, Shannon, and Taney counties.

**Argemone intermedia** Sweet. Prickly Poppy.

Open ground. Oxylophile to circumneutral. Central and southern Mo., scattered: St. Louis, Dunklin, Butler, Jackson, and Greene counties. Introduced except perhaps in southeastern lowlands.

**Argemone alba** Lestiboudois.

Waste and open ground. Indifferent. Southeastern Mo.: Butler Co., and also introduced in Jackson Co.

**Argemone mexicana** L. Mexican Poppy.

Waste open ground and along railroads. Introduced in Knox, Phelps, Jackson, and Jasper counties.

**PAPAVER DUBIUM** L. Blind Eyes.

Waste ground. Escaped from cultivation in Adair and Jackson counties.

**PAPAVER RHOEAS** L. Corn Poppy.

Waste ground. Escaped in Adair and Cole counties.

**PAPAVER SOMNIFERUM** L. Common Poppy.

Cultivated in gardens and escaped into waste ground: Jackson Co., and also recorded from Greene Co.

**Fam. FUMARIACEAE****Dicentra Cucullaria** (L.) Bernh. Dutchman's Breeches.

Rich woods and moist rocky ground along bluffs. Circumneutral to calciphile. General.

**Dicentra canadensis** (Goldie) Walp. Squirrel Corn.

Rich banks and along shaded bluffs. Circumneutral. Rare. Northern and central Mo.: Marion, Warren, St. Louis, Jefferson, Boone, and Jackson counties.

**Corydalis flavula** (Raf.) DC.

Rich woods and moist rocky banks or ledges along bluffs. Circumneutral. General.

**Corydalis micrantha** (Engelm.) Gray.

Rich woods, and along open or shaded banks and bluffs. Circumneutral. Western Mo.: Miller, Platte, Clay, Jackson, Henry, Webster, Wright, Stone, Jasper, Newton, and McDonald counties.

**Corydalis crystallina** Engelm.

Open woods, prairies, and barrens. Circumneutral. Western Mo.: Livingston, Pettis, Cass, Bates, Vernon, Henry, St. Clair, Greene, Lawrence, Jasper, Newton, and McDonald counties.

**Corydalis campestris** (Britton) Buchholz & Palmer, Trans. Acad. Sci. St. Louis 25: 115. 1926.

*Capnoides campestre* Britton (B & B).

Rocky woods. Circumneutral. Southwestern Mo.: McDonald Co.



***Corydalis aurea* Willd.**

Open or rocky woods, prairies, glades, fallow fields, ledges, and roadsides. Calciphile to circumneutral. General: Livingston, Grundy, Daviess, Adair, Ralls, St. Louis, Jefferson, Ste. Genevieve, Mississippi, Dunklin, Wayne, Carter, Phelps, Texas, Camden, Saline, Randolph, Wright, Polk, Clay, Jackson, Cass, Vernon, Greene, Jasper, and McDonald counties.

***Corydalis aurea* var. *occidentalis* Engelm.**

*Corydalis montanum* (Engelm.) Britton (B & B).

Open or rocky woods, glades, and prairies. Circumneutral. Central and southern Mo.: St. Louis, Jefferson, Madison, Gasconade, Boone, Phelps, Crawford, Pulaski, Moniteau, Henry, St. Clair, Cedar, Jackson, and Jasper counties.

**Fam. CRUCIFERAE*****DRABA VERNA* L. Whitlow Grass.**

Fields and waste ground. Circumneutral. Eastern and middle Mo., scattered: Marion, St. Louis, Boone, and Cole counties.

***Draba reptans* (Lam.) Fernald, Rh. 36: 368. 1934.**

*Draba caroliniana* Walt. (G), (B & B).

Fields, glades, rocky ledges, and waste ground. Circumneutral to oxylophile; frequently on sandstone or cherty soils. General.

***Draba reptans* var. *micrantha* (Nutt.) Fernald, Rh. 36: 368. 1934.**

*Draba caroliniana* var. *micrantha* (Nutt.) Gray (G).

Sandy bottoms and rocky glades. Oxylophile to circumneutral. Local: Jackson Co.

***Draba cuneifolia* Nutt.**

Rocky open woods, glades, and rocky ledges. Calciphile to circumneutral. Central and southern Mo., south of a line drawn from Ralls and Boone counties to Jackson Co.

***Draba brachycarpa* Nutt.**

Prairies, cultivated and fallow fields, and low open ground or glades. Circumneutral. Central and southern Mo. south of a line drawn from St. Charles, Audrain, and Randolph counties to Jackson Co.

***BERTEROA INCANA* (L.) DC. Hoary Alyssum.**

Dry open ground. Circumneutral. Introduced in Greene Co.

***Lesquerella gracilis* (Hook.) Wats. Slender Bladder-pod.**

Glades and rocky open woods. Calciphile. Southwestern Mo.: Greene, Dade, Lawrence, and Jasper counties, and also introduced in Bollinger Co.

***Lesquerella angustifolia* (Nutt.) Wats.**

Glades and barrens. Calciphile. Southwestern Mo., local: Greene Co.

***THLASPI ARVENSE* L. Penny Cress.**

Waste ground, and along roadsides and railroads. Indifferent. Northern and central Mo., and perhaps more general: Macon, St. Charles, St. Louis, Jefferson, Franklin, Boone, Cooper, Chariton, Carroll, Gentry, Daviess, Atchison, Nodaway, and Jackson counties.

***THLASPI PERFOLIATUM* L.**

Along rocky stream bed. Introduced in Jefferson Co.

*Lepidium virginicum* L. Tonguegrass, Peppergrass.

*Lepidium texanum* Buckl. (R).

Fields, roadsides, and waste ground. Indifferent. General and common.

*LEPIDIUM DENSIFLORUM* Schrad.

*Lepidium neglectum* Thell.

*Lepidium apetalum* of auth., not Willd. (G).

Fields, waste ground, and about dwellings. Indifferent. General but scattered.

*LEPIDIUM PERFOLIATUM* L.

Waste ground and along railroads and roadsides. Indifferent. Scattered: St. Louis, Madison, and Jackson counties.

*LEPIDIUM CAMPESTRE* (L.) R. Br.

Waste ground and along railroads. Indifferent. Northern, central, and eastern Mo., and occasional elsewhere: Adair, Knox, Ralls, Pike, Lincoln, St. Charles, St. Louis, Franklin, Madison, Iron, Laclede, Livingston, Carroll, Daviess, and Jackson counties.

*LEPIDIUM DRABA* L.

Waste ground. Circumneutral. Introduced in St. Louis Co.

*CORONOPUS DIDYMUS* (L.) Sm.

Waste ground. Indifferent. Southeastern Mo.: Dunklin and Butler counties.

*CAPSELLA BURSA-PASTORIS* (L.) Medic. Shepherd's Purse.

Fields, roadsides, waste ground, and about dwellings. Indifferent. General and common.

*CAMELINA SATIVA* (L.) Crantz. False Flax.

Waste ground and along railroads. Indifferent. Scattered: St. Louis and Jackson counties.

*CAMELINA MICROCARPA* Andre.

Similar situations to the preceding and more common. Indifferent. General but scattered: St. Louis, Jefferson, Franklin, Iron, Cole, Clay, Jackson, Lawrence, and Jasper counties.

*RAPHANUS SATIVUS* L. Radish.

Introduced in fields and waste ground. Indifferent. Scattered: Boone and Jackson counties.

*ERUCA SATIVA* Mill. Garden Rocket.

Introduced along railroads. Indifferent. Scattered: Clark and Jackson counties.

*ERUCASTRUM POLLICHII* Spenner.

Waste ground. Indifferent. Introduced in Jackson Co.

*BRASSICA ALBA* (L.) Boiss. White Mustard.

Fields and waste ground. Indifferent. General.

*BRASSICA ARVENSIS* (L.) Ktze. Charlock.

Fields, roadsides, and waste ground. Indifferent. General.

*BRASSICA JUNCEA* (L.) Cosson. Indian Mustard.

Fields and waste ground. Indifferent. General.

**BRASSICA JAPONICA** Siebold. Curled Mustard.

Fields and waste ground. Indifferent. General but scattered: Pike, St. Louis, Boone, Jackson, and Jasper counties.

**BRASSICA NIGRA** (L.) Koch. Black Mustard.

Fields, waste ground, and roadsides. Indifferent. General.

**BRASSICA CAMPESTRIS** L. Rutabaga.

Open and waste ground. Indifferent. General.

**CONRINGIA ORIENTALIS** (L.) Dumort. Hare's-ear Mustard.

Waste ground and along roadsides and railroads. Indifferent. Scattered: St. Louis, Jefferson, St. Francois, Iron, Randolph, Boone, Daviess, Clay, and Jackson counties.

**SISYMBRIUM OFFICINALE** (L.) Scop. Hedge Mustard.

Fields, waste ground, and along railroads. Indifferent. General.

**SISYMBRIUM OFFICINALE** var. **LEIOCARPUM** DC.

Frequently found with the typical form.

**SISYMBRIUM ALTISSIMUM** L. Tumble Mustard.

Fields, waste ground, and along railroads. Indifferent. General.

**DESCURAINIA SOPHIA** (L.) Wetts.

*Sisymbrium Sophia* L. (G).

*Sophia Sophia* (L.) Britton (B & B).

Prairie banks and waste ground. Circumneutral. Western Mo.: Jackson and Nodaway counties.

**Descurainia intermedia** (Rydb.) Daniels. Tansy Mustard.

*Sisymbrium canescens* Nutt. var. *brachycarpon* (Richards.) Wats. (G).

*Sophia brachycarpa* (Richards.) Rydb. (R).

*Sophia pinnata* (Walt.) Howell (B & B), in part.

Glades, open banks, and prairies, roadsides, and dry rocky ledges along bluffs. Calciphile to circumneutral. General. This and the previous species have sometimes been confused with *Descurainia incisa* (*Sisymbrium incisum*) and *Descurainia canescens* (*Sisymbrium canescens*) which are not known to occur in Mo.

**ARABIDOPSIS THALIANA** (L.) Heynh. Mouse-ear Cress.

*Sisymbrium Thalianum* (L.) J. Gay (G).

Rocky or alluvial open ground and fields. Circumneutral. East-central and southern Mo., scattered: Callaway, St. Louis, Ste. Genevieve, Cape Girardeau, Stoddard, Pemiscot, and Ozark counties.

**ERYSIMUM REPANDUM** L.

Fields, waste ground, and along railroads. Indifferent. Central Mo., scattered: Jefferson, Franklin, Cole, Montgomery, Boone, and Jackson counties.

**Erysimum asperum** DC. Western Wall-flower.

*Erysimum arkansanum* Nutt.

Glades and along rocky bluffs. Calciphile. Central and southern Mo.: St. Charles, St. Louis, Jefferson, Franklin, Osage, Maries, Miller, Camden, Benton, Cooper, Jackson, and Taney counties.

**Erysimum cheiranthoides** L. Worm-seed Mustard.

Fields and waste ground. Circumneutral. Scattered: Clark, St. Louis, Pulaski, and Jackson counties.

**Roripa Nasturtium-aquaticum** (L.) Schinz & Thell. Fl. Schweiz, ed. 3, 240. 1909. Water Cress.

*Radicula Nasturtium-aquaticum* (L.) Britten & Bendle (G).

*Sisymbrium Nasturtium-aquaticum* L. (B & B).

In springs and clear running water. Calciphile to circumneutral. Abundant in central and southern Mo., and perhaps found throughout the state.

**Roripa sinuata** (Nutt.) Hitchc.

*Radicula sinuata* (Nutt.) Greene (G), (B & B).

Low open ground and alluvial banks of streams. Circumneutral. General but scattered: Marion, Ralls, St. Louis, Jefferson, Perry, Pemiscot, Camden, Boone, Cooper, Daviess, Atchison, Clay, and Jackson counties.

**Roripa sessiliflora** (Nutt.) Hitchc.

*Radicula sessiliflora* (Nutt.) Greene (G), (B & B).

Wet open woods and borders of sloughs, ponds, and streams. Circumneutral. General.

**RORIPA SYLVESTRIS** (L.) Bess. Yellow Cress.

*Radicula sylvestris* (L.) Druce (G), (B & B).

Wet meadows and banks of streams. Circumneutral. Scattered: St. Louis, Boone, Stone, and McDonald counties.

**Roripa obtusa** (Nutt.) Britton.

*Radicula obtusa* (Nutt.) Greene (G), (B & B).

Wet woods and borders of sloughs, ponds, and ditches. Circumneutral. General.

**Roripa hispida** (Desv.) Britton. See Rh. 30: 131. 1928. Marsh Water Cress.

*Radicula palustris* var. *hispida* (Desv.) Robinson (G).

Alluvial flats along the Mississippi River. Circumneutral. Local: Perry Co.

**Roripa hispida** var. *glabrata* Lunell. See Rh. 30: 133. 1928. Marsh Water Cress.

*Radicula palustris* of Am. auth., not Moench (G), (B & B).

Wet woods, borders of sloughs and ponds, and alluvial soils of streams and rivers. Circumneutral. General.

**Roripa aquatica** (Eat.) Palmer & Steyermark, comb. nov. Lake Cress.

*Radicula aquatica* (Eat.) Robinson (G).

*Neobeckia aquatica* (Eat.) Britton (B & B).

Sloughs and swampy woods. Circumneutral. Southern Mo., scattered: St. Louis, Jefferson, Ripley, Phelps, and Jasper counties.

**RORIPA ARMORACIA** (L.) Hitchc. Horseradish.

*Radicula Armoracia* (L.) Robinson (G).

*Armoracia Armoracia* (L.) Britton (B & B).

Cultivated and occasionally escaped into fields and waste ground. Indifferent. Scattered: Boone, Jackson, and Taney counties.

**Barbarea vulgaris** R. Br. Yellow Rocket, Winter Cress.

Wet fields, moist meadows, and alluvial ground. Circumneutral. General.

**Barbarea vulgaris** var. *longisiliquosa* Carion. See Rh. 11: 139. 1909.

*Barbarea stricta* of auth. in part, not Andr. (G), (B & B).

Moist meadows and alluvial ground. Circumneutral. Western Mo., local: Jackson Co. This has sometimes been confused with the preceding variety.

*Selenia aurea* Nutt.

Rocky prairies, chert, sandstone and leached limestone glades, sandy fields, and roadsides. Oxylophile. Southwestern Mo.: Benton, Polk, Webster, Greene, St. Clair, Cedar, Lawrence, Vernon, Jasper, and Newton counties.

*Iodanthus pinnatifidus* (Michx.) Steud. Purple Rocket.

Wet woods and moist alluvial thickets. Circumneutral. General.

*Leavenworthia uniflora* (Michx.) Britton.

Wet rocky ledges and depressions in glades. Calciphile. East-central and southern Mo.: St. Louis, Franklin, Jefferson, St. Francois, Washington, Crawford, Madison, Shannon, Maries, Gasconade, Montgomery, Phelps, Pulaaki, Laclede, Miller, Camden, Dallas, Polk, Wright, Webster, Douglas, Taney, Stone, and Barry counties.

*Dentaria laciniata* Muhl. Toothwort, Pepper-root.

Rich or rocky woods. Circumneutral. General.

*Dentaria laciniata* var. *integra* (Schulz) Fernald.

Similar situations to the typical form. Circumneutral. Scattered throughout the range of the typical form.

*Cardamine bulbosa* (Schreb.) BSP. Spring Cress.

Wet woods and meadows, and along wet sandstone cliffs. Circumneutral to oxylophile. Eastern, central, and southern Mo., south of a line drawn from St. Louis, Montgomery, Audrain, and Randolph, to Camden and Jackson counties.

*Cardamine pennsylvanica* Muhl.

Wet woods, bogs, and springy ground. Circumneutral. General.

*Cardamine parviflora* L. var. *arenicola* (Britton) O. E. Schulz. See Rh. 29: 192. 1927.

*Cardamine parviflora* of Am. auth., not L. (G), (B & B), in part.

*Cardamine arenicola* Britton (B & B), in part.

Wet open woods, fields, wet rocky ledges, and depressions in glades. Circumneutral to oxylophile. General.

*Cardamine Douglassii* (Torr.) Britton. Spring Cress.

Alluvial and moist woods. Circumneutral. Eastern and northern Mo.: Adair, Knox, Shelby, Chariton, and Cape Girardeau counties.

*Arabis lyrata* L. Rock Cress.

Rocky bluffs or ledges, on limestone or sandstone. Calciphile to circumneutral. Eastern Mo., south of the Missouri River: St. Louis, Jefferson, Washington, Crawford, Shannon, and Texas counties.

*Arabis dentata* T. & G.

Rich woods, moist rocky ledges, and borders of streams. Circumneutral. Central and southern Mo.: Boone, Warren, St. Louis, Jefferson, Franklin, Washington, St. Francois, Ste. Genevieve, Scott, Stoddard, Shannon, Camden, Texas, Laclede, Morgan, Polk, Saline, Jackson, Benton, St. Clair, Wright, Douglas, Taney, Stone, and Jasper counties.

***Arabis virginica* (L.) Poir. See Rh. 29: 192. 1927.**

Open alluvial ground, fallow fields, and waste ground. Circumneutral to oxylophile. Central and southern Mo., south of a line drawn from Ralls and Chariton counties to Jackson Co.

***Arabis hirsuta* (L.) Scop.**

Rocky ledges and bluffs, usually on limestone. Calciphile to circumneutral. Eastern, central, and southern Mo., but apparently absent from much of the Ozark region: Clark, Lewis, Marion, Ralls, Boone, St. Louis, Jefferson, Franklin, Washington, Cape Girardeau, Carter, Shannon, Oregon, Webster, Christian, Taney, Stone, Jackson, Jasper, Newton, and McDonald counties.

***Arabis viridis* Harger, Rh. 13: 38. 1911.**

Dry rocky woods, rocky open ground and bluffs. Oxylophile. Southern and east-central Mo.: Ste. Genevieve, Madison, Wayne, Stoddard, Ripley, Carter, Iron, Washington, Franklin, Crawford, Dent, Reynolds, Oregon, Shannon, Texas, Phelps, Pulaaki, Douglas, Stone, Ozark, Jasper, Newton, and McDonald counties. This species has previously been confused with *Arabis Drummondii*, *A. patens*, *A. brachycarpa*, and *A. glabra*, none of which occur in Missouri, and has also been confused with *A. laevigata*.

***Arabis laevigata* (Muhl.) Poir.**

Rich woods, along base of bluffs, alluvial ground along streams, and along bluffs and ledges. Circumneutral. Eastern, central, and Southern Mo., east and south of a line drawn from Marion, Shelby, Boone, and Henry counties to Vernon Co., and locally northwest in Platte Co.

***Arabis canadensis* L. Sickie-pod.**

Rocky woods and bluffs. Circumneutral. General.

**FAM. CAPPARIDACEAE*****Polanisia graveolens* Raf. Clammy-weed.**

Rocky open ground, waste ground, and gravel bars along streams. Circumneutral to oxylophile. General but not common.

***Polanisia trachysperma* T. & G.**

In similar situations to the preceding. Circumneutral. Southwestern Mo.: Greene, Taney, Stone, Barry, and McDonald counties.

***Cleome serrulata* Pursh. Rocky Mountain Bee-plant.**

Loess hills and waste ground. Circumneutral. Northwestern Mo., and introduced in central Mo.: Atchison, Jackson, and St. Louis counties.

***Cleome spinosa* L. Spider-flower.**

Cultivated in gardens and sometimes escaped into waste ground. Indifferent. Scattered: St. Louis, Pemiscot, Dunklin, Taney, Stone, Barry, and Jasper counties.

**FAM. CRASSULACEAE*****Penthorum sedoides* L. Ditch Stonecrop.**

Low wet woods, swamps, and along sloughs and ditches. Circumneutral. General.



*Sedum Nuttallianum* Raf. Yellow-flowered Stonecrop.

Chert glades. Oxylophile to circumneutral. Southwestern Mo., local: Jasper and Newton counties.

*Sedum pulchellum* Michx. Widow's Cross.

Glades, rocky ledges, and bluffs. Calciphile to circumneutral; most frequently on limestone, but also found on granitic and siliceous rocks. Central and southern Mo., but commonest in the western Ozark region: Moniteau, Boone, Lincoln, Oregon, Texas, Dallas, Polk, Greene, Wright, Webster, Christian, Stone, Jackson, Cass, Henry, St. Clair, Cedar, Dade, Lawrence, Barry, Jasper, Newton, and McDonald counties. This has been confused with the eastern *Sedum Nevii* which is not known in Mo.

*Sedum ternatum* Michx.

Rocky ledges and glades. Calciphile to circumneutral. Scattered: Marion, Greene, and Barry counties.

*SEDUM TRIPHYLLUM* (Haw.) S. F. Gray. See Rh. 11: 46. 1909. Live-forever, Orpine.

*Sedum purpureum* Tausch (G).

Planted in old gardens and escaped to roadsides and waste ground. Indifferent. Scattered: Clark, Scotland, Marion, St. Louis, Boone, and Jasper counties.

#### FAM. SAXIFRAGACEAE

*Sullivantia renifolia* Rosendahl, Univ. Minn. Studies Biol. Sci. 6: 410, pl. 43. 1927.

*Sullivantia Sullivantii* of auth., not (T. & G.) Britton (G), (B & B).

On moist shaded bluffs of St. Peter sandstone. Oxylophile. East-central Mo., local: Warren and Jefferson counties.

*Saxifraga pennsylvanica* L. var. *Forbesii* (Vasey) Engl. & Irmach. Pflanzenreich 4, Fam. 117, 1: 66. 1916.

*Saxifraga Forbesii* Vasey (G).

*Micranthes pennsylvanica* (L.) Haw., in part (B & B).

Moist shaded sandstone bluffs. Oxylophile. East-central Mo.: Montgomery, Warren, Lincoln, St. Charles, St. Louis, and Jefferson counties.

*Saxifraga virginiana* Michx. Early Saxifrage.

*Micranthes virginiana* (Michx.) Small (B & B).

Moist ledges along bluffs; on sandstone or granitic rocks. Oxylophile. East-central Mo., and southern Mo., in the eastern Ozark region: St. Louis, Jefferson, Ste. Genevieve, Madison, Iron, Phelps, Texas, and Douglas counties.

*Saxifraga texana* Buckley.

*Micranthes texana* (Buckl.) Small.

Rocky prairies and glades. Oxylophile. Southwestern Mo.: Polk, Greene, St. Clair, Cedar, Vernon, Barton, Jasper, and Newton counties.

*Heuchera americana* L. Alum Root.

Rocky open woods. Oxylophile to circumneutral. Southern and east-central Mo.: Jefferson, Washington, Madison, Iron, Dunklin, Butler, Ozark, Jasper, and Jackson counties.

***Heuchera hirsuticaulis* (Wheulock) Rydb.**

Rocky bluffs and banks. Circumneutral. Southern Mo., mostly in the eastern Ozark region: Jefferson, Washington, Cape Girardeau, Iron, Madison, Reynolds, Carter, Oregon, Shannon, Dent, Pulaski, Camden, and Taney counties.

***Heuchera Richardsonii* R. Br. var. *Grayana* Rosendahl, Butters & Lakela, Rh. 35: 117. 1933.**

*Heuchera hispida* of auth., not Pursh (G), (B & B).

Open rocky woods, prairies, and along bluffs and embankments. Circumneutral. General. This is the common species in Mo., and it has frequently been confused with *H. hirsuticaulis*.

***Heuchera puberula* Mack. & Bush.**

*Heuchera parviflora* of auth., not Bartl. (G), (B & B).

Shaded limestone bluffs. Calciphile. Southern Mo.: Ste. Genevieve, Ripley, Carter, Shannon, Oregon, Texas, Howell, Ozark, and Douglas counties.

***Heuchera villosa* Michx.**

Shaded limestone bluffs. Calciphile. Southeastern Mo.: Iron Co.

***Heuchera macrorrhiza* Small.**

Shaded limestone bluffs. Calciphile. Southeastern Mo.: Iron Co.

***Mitella diphylla* L. Miterwort.**

Moist shaded bluffs; on limestone or sandstone. Calciphile to circumneutral. East-central and southeastern Mo.: Montgomery, Warren, St. Charles, Jefferson, Perry, Ripley, Oregon, Howell, and Texas counties.

***Parnassia grandifolia* DC. Grass of Parnassus.**

Moist limestone bluffs and moist rocky or boggy ground along streams. Circumneutral to calciphile. Southern Mo., rare and scattered: Washington, Shannon, Texas, Douglas, and Ozark counties.

***Hydrangea arborescens* L. Wild Hydrangea.**

Shaded rocky banks and bluffs. Circumneutral; often on limestone but also found on siliceous and granitic rocks. Central and southern Mo. Common in the Ozark region.

***Hydrangea arborescens* f. *grandiflora* Rehder.**

Rarely found with the typical form. Stoddard Co.

***Hydrangea arborescens* var. *Deamii* St. John, Rh. 23: 208. 1922.**

Similar situations to the typical form. Scattered in southern Mo.: Bollinger, Shannon, Phelps, Pulaski, Dallas, Hickory, and Newton counties.

***Hydrangea arborescens* var. *Deamii* f. *acarpa* St. John, Rh. 23: 208. 1902.**

*Hydrangea cinerea* f. *sterilis* Rehder.

Rarely found with the typical form. Shannon Co.

***Hydrangea arborescens* var. *oblonga* T. & G.**

In similar situations to the typical form. East-central and southern Mo.: St. Louis, Cape Girardeau, Reynolds, Shannon, Ozark, and Barry counties.

***Hydrangea arborescens* var. *oblonga* f. *sterilis* St. John, Rh. 23: 208. 1922.**

Rarely found with the typical form. Ozark Co.

***Itea virginica* L. Virginia Willow.**

Swamps, borders of bayous, and low wet woods. Circumneutral. Southeast-

ern Mo., in the lowlands: Cape Girardeau, Bollinger, New Madrid, Dunklin, and Butler counties.

**Ribes Cynosbati L.** Prickly Gooseberry.

Rocky woods and bluffs. Circumneutral. Eastern and southern Mo.: Clark, Lewis, Gasconade, St. Louis, Jefferson, Perry, Cape Girardeau, Scott, Stoddard, Oregon, Shannon, Dent, Texas, Howell, Polk, and Stone counties.

**Ribes missouriense Nutt.** Wild Gooseberry.

*Ribes gracile* Michx. (G).

*Grossularia missouriensis* (Nutt.) Coville & Britton (B & B).

Rocky open woods and bluffs. Circumneutral to calciphile. General.

**Ribes odoratum Wendl.** See Rh. 11: 47. 1909. Flowering Currant.

*Ribes aureum* of auth., not Pursh (G).

Along high rocky bluffs of White River and its tributaries. Calciphile. Southwestern Mo.: Taney, Stone, and Barry counties.

### Fam. HAMAMELIDACEAE

**Hamamelis virginiana L.** Witch-hazel.

Rocky woods and low ground along streams. Oxylophile to circumneutral. Southeastern Mo., in the Iron Mountain sub-region: Iron, Shannon, and Reynolds counties.

**Hamamelis vernalis Sarg.** Trees & Shrubs 2: 137, pl. 156. 1911. Ozark Witch-hazel.

Margins and gravel bars of rocky streams. Circumneutral. Southern Mo.: Franklin, Washington, St. Francois, Ste. Genevieve, Bollinger, Stoddard, Madison, Iron, Reynolds, Wayne, Carter, Ripley, Oregon, Shannon, Texas, Phelps, Pulaaki, Dallas, Douglas, Ozark, Christian, Taney, Stone, and Barry counties.

**Hamamelis vernalis f. tomentella** Rehder, Jour. Arnold Arb. 1: 256. 1920.

Sometimes found with the typical form. Taney and Barry counties.

**Hamamelis vernalis f. carnea** Rehder, Jour. Arnold Arb. 9: 30. 1928.

Occasionally found with the typical form. Iron and Madison counties.

**Liquidambar Styraciflua L.** Sweet Gum.

Low woods and along streams. Oxylophile to circumneutral. Southeastern Mo., in the lowlands: Perry, Cape Girardeau, Bollinger, Madison, Scott, Mississippi, New Madrid, Pemiscot, Dunklin, Stoddard, Butler, Wayne, Ripley, and Oregon counties.

### Fam. PLATANACEAE

**Platanus occidentalis L.** Sycamore.

Woods along streams. Circumneutral. General and probably in every county.

**Platanus occidentalis var. glabrata** (Fernald) Sarg. Bot. Gaz. 67: 230. 1919.

Occasionally found with the typical form. Madison and Jasper counties.

**Platanus occidentalis f. attenuata** Sarg. Bot. Gaz. 67: 229. 1919.

Occasionally found with the typical form. Shannon and Jasper counties.

## Fam. ROSACEAE

**Physocarpus opulifolius** (L.) Maxim var. *intermedius* (Rydb) Robinson. Nine-bark.

Thickets, and rocky banks and bluffs of streams. Circumneutral. Eastern, central, and southern Mo.; commonest in the Ozark region.

**Spiraea alba** Du Roi. Meadow-sweet.

*Spiraea salicifolia* of auth. in part, not L. (G).

Moist meadows and open ground along streams. Oxylophile to circumneutral. Rare. Northern Mo.: Grundy Co., and also reported from Harrison Co.

**Spiraea tomentosa** L. var. *rosea* (Raf.) Fernald, Rh. 14: 190. 1912. Hardhack.

Rocky and sandy open ground. Oxylophile. Southeastern Mo., local: Dunklin Co.

**Arunctus sylvestris** Kostel. Goat's Beard.

Rocky or moist woods, and along base of bluffs. Circumneutral. Eastern, central, and southern Mo., south and east of a line drawn from Lewis, Montgomery, Saline, Benton, and Greene counties to McDonald Co.

**Gillenia stipulata** (Muhl.) Trelease. American Ipecac.

Rocky woods. Circumneutral to oxylophile. Eastern, central, and southern Mo.; commonest in the Ozark region.

**PYRUS COMMUNIS** L. Pear.

Planted and sometimes escaped in thickets. Scattered: St. Louis, Boone, and Jasper counties.

**MALUS PUMILA** Mill. Apple.

*Pyrus Malus* L. (G).

*Malus Malus* (L.) Britton (B & B).

Cultivated and escaped, in thickets, pastures, and waste ground. Scattered: St. Louis, Boone, Jackson, and Jasper counties.

**Malus ioensis** (Wood) Bailey. Wild Crab-apple.

*Pyrus ioensis* (Wood) Britton (G).

Thickets along small streams, pastures, and borders of woods. Circumneutral to calciphile. General, but commonest in northern Mo.

**Malus ioensis** var. *Palmeri* Rehder in Sarg. Trees & Shrubs 2: 142. 1911.

Thickets and woods along small streams. Circumneutral. General, but commonest in the Ozark region.

**Malus ioensis** var. *Bushii* Rehder in Sarg. Trees & Shrubs 2: 232. 1913.

Open woods. Circumneutral. Southeastern Mo.: Shannon, Wayne, and Dunklin counties.

**Malus ioensis** var. *spinosa* Rehder in Sarg. Trees & Shrubs 2: 231. 1913.

Open woods and thickets. Circumneutral. Southeastern Mo.: Dunklin and Oregon counties.

**Malus lancifolia** Rehder in Sarg. Trees & Shrubs 2: 141. 1911.

Open woods and thickets. Circumneutral. Central and southern Mo.: St. Francois, Iron, Bollinger, Wayne, Boone, and Jackson counties.

*Malus coronaria* (L.) Mill. American Crab.

*Pyrus coronaria* L. (G).

Thickets along streams. Circumneutral to calciphile. Scattered: Madison, Butler, and Jackson counties.

*Malus bracteata* Rehder in Sarg. Trees & Shrubs 2: 230. 1913.

Open woods and thickets. Circumneutral. Southeastern Mo.: Dunklin Co.

× *Malus Soulandi* (Bailey) Britton.

× *Pyrus Soulandi* Bailey (G).

A hybrid between *Malus pumila* and *M. ioensis*. Occasionally found in the range of the latter.

*Amelanchier canadensis* (L.) Medic. See Rh. 14: 150. 1912. Juneberry, Shad Bush, Service Berry.

*Amelanchier canadensis* var. *Botryapium* (L.f.) T. & G. (G).

Rocky woods and along bluffs. Oxylophile to circumneutral. General, but apparently absent from some of the northern counties.

*Amelanchier humilis* Wiegand, Rh. 14: 126, 141. 1912.

Open ground and prairie banks along railroad. Western Mo.: Pettis and Lawrence counties. Probably introduced.

*Crataegus crus-galli* L. Cockspur Thorn.

*Crataegus albanthera* Sarg.

*Crataegus calophylla* Sarg.

*Crataegus candens* Sarg.

*Crataegus efferta* Sarg.

*Crataegus effulgens* Sarg.

*Crataegus ferox* Sarg.

*Crataegus hamata* Sarg.

*Crataegus Parkae* Sarg.

*Crataegus polyclada* Sarg.

*Crataegus severa* Sarg.

*Crataegus strongylophylla* Sarg.

*Crataegus tardiflora* Sarg.

Thickets, pastures, and borders of woods, rocky or alluvial ground. Circumneutral to calciphile. General and common.

*Crataegus crus-galli* f. *truncata* (Sarg.) Palmer, comb. nov.

*Crataegus truncata* Sarg.

Occasionally found with the typical form. Southern Mo.: Taney Co.

*Crataegus crus-galli* var. *exigua* (Sarg.) Eggleston.

*Crataegus exigua* Sarg.

*Crataegus rudis* Sarg.

Occasionally found with the typical form. Shannon Co.

*Crataegus crus-galli* var. *macra* (Beadle) Palmer, comb. nov.

*Crataegus macra* Beadle.

*Crataegus consueti* Sarg.

*Crataegus monosperma* Sarg.

*Crataegus permora* Sarg.

Found in similar situations to the typical form. Calciphile to circumneutral.

Central and southern Mo.: Boone, Butler, Shannon, Ozark, Taney, and Greene counties.

***Crataegus crus-galli* var. *barrettiana* (Sarg.) Palmer, comb. nov.**

*Crataegus barrettiana* Sarg.

Found in similar situations to the typical form. Eastern Mo.: St. Louis Co.

***Crataegus crus-galli* var. *leptophylla* (Sarg.) Palmer, comb. nov.**

*Crataegus leptophylla* Sarg.

Found in similar situations to the typical form. Scattered: Osage, Madison, and Wayne counties.

***Crataegus crus-galli* var. *pachyphylla* (Sarg.) Palmer, comb. nov.**

*Crataegus pachyphylla* Sarg.

Thickets and open woods along streams. Calciphile to circumneutral. Scattered: Osage and St. Francois counties.

***Crataegus crus-galli* var. *bellica* (Sarg.) Palmer, comb. nov.**

*Crataegus bellica* Sarg.

Thickets and borders of woods; gravelly hills and alluvial ground. Circumneutral to calciphile. Southeastern Mo.: Butler Co.

***Crataegus tantula* Sarg.**

*Crataegus lawrencensis* Sarg.

Thickets along streams. Circumneutral to calciphile. Southwestern Mo.: Lawrence, Jasper, and Newton counties.

***Crataegus rotunda* Sarg.**

Prairies and thickets along small streams. Circumneutral to calciphile. Southwestern Mo.: Jasper, Newton, and Barry counties.

***Crataegus discolor* Sarg.**

*Crataegus jasperensis* Sarg.

*Crataegus parviflora* Sarg.

*Crataegus rubrisepala* Sarg.

*Crataegus rubrifolia* Sarg.

*Crataegus tenuisepala* Sarg.

Thickets, pastures, and borders of woods, along small streams. Calciphile to circumneutral. Southern Mo.: Butler, Carter, Texas, Douglas, Dallas, Barry, and Jasper counties.

***Crataegus acutifolia* Sarg.**

*Crataegus erecta* Sarg.

*Crataegus ludoviciensis* Sarg.

Open woods and borders of woods along streams. Circumneutral to calciphile. Northern and east-central Mo.: Clark, Daviess, Pike, St. Louis, and Osage counties.

***Crataegus Palmeri* Sarg.**

Thickets, pastures, and open woods; on limestone hills or along small streams. Calciphile to circumneutral. Southwestern Mo.: Vernon, Lawrence, Jasper, Newton, and McDonald counties.

***Crataegus intermixta* Sarg.**

Thickets, pastures, and limestone hills. Calciphile to circumneutral. Eastern Mo., north of the Missouri River: Marion, Ralls, and Pike counties.



***Crataegus regalis* Beadle.**

Rocky open woods and thickets. Circumneutral to calciphile. Southern Mo.: Oregon Co.

***Crataegus regalis* var. *paradoxa* (Sarg.) Palmer, comb. nov.**

*Crataegus paradoxa* Sarg.

Prairies and thickets along small streams. Circumneutral to calciphile. Southwestern Mo.: Jasper and Newton counties.

***Crataegus pyracanthoides* Beadle var. *arborea* (Beadle) Palmer, comb. nov.**

*Crataegus arborea* Beadle.

*Crataegus tenuispina* Sarg.

Open woods and banks of small streams. Circumneutral to calciphile. Southeastern Mo.: Dunklin, Wayne, Carter, and Shannon counties.

***Crataegus hannibalensis* Palmer, Jour. Arnold Arb. 16: 353. 1935.**

Thickets, borders of woods, and along bluffs. Calciphile to circumneutral. Northern and eastern Mo.: Schuyler, Clark, Marion, Ralls, Pike, Monroe, St. Francois, Mercer, Harrison, and Clinton counties.

***Crataegus Danielsi* Palmer, Jour. Arnold Arb. 16: 355. 1935.**

Thickets, limestone hills, and bluffs. Calciphile to circumneutral. Central Mo.: Boone Co.

***Crataegus Danielsi* f. *glabra* Palmer, Jour. Arnold Arb. 16: 357. 1935.**

Barely found with the typical form. Central Mo.: Boone Co.

***Crataegus vallicola* Sarg.**

*Crataegus phaneroneura* Sarg.

Thickets and borders of woods, limestone hills, and along bluffs. Calciphile to circumneutral. Eastern and middle Mo.: Macon, Pike, Lincoln, St. Louis, and Dent counties.

***Crataegus Engelmannii* Sarg.**

*Crataegus barbata* Sarg.

*Crataegus hirtella* Sarg.

*Crataegus munita* Sarg.

*Crataegus pilifera* Sarg.

*Crataegus setosa* Sarg.

*Crataegus villiflora* Sarg.

Thickets and open woods, glades, and limestone hills. Calciphile to circumneutral. Central and southern Mo.: St. Louis, Franklin, St. Francois, Ste. Genevieve, Iron, Wayne, Butler, Dunklin, Carter, Texas, Dent, Phelps, Pulaski, Cole, Dallas, Polk, Webster, Christian, Taney, Stone, Barry, Jasper, Newton, and McDonald counties.

***Crataegus Engelmannii* f. *nuda* Palmer, f. nov.**

*Crataegus infesta* Sarg.

*Crataegus tenuis* Sarg.

Occasionally found with the typical form. Scattered: St. Louis, Franklin, and Jasper counties.

A typo differt foliis inflorescentiis ramulisque novellis glabris.

***Crataegus fecunda* Sarg.**

Thickets and open ground along streams. Calciphile to circumneutral. Cen-

tral and southeastern Mo.: Boone, St. Louis, Ste. Genevieve, Cape Girardeau, and Wayne counties.

***Crataegus collina* Chapm.**

*Crataegus angustata* Sarg.

*Crataegus macropoda* Sarg.

*Crataegus suida* Sarg.

*Crataegus sordida* var. *villosa* Sarg.

*Crataegus vicina* Sarg.

Thickets and open woods; on limestone hills or along small streams. Calciphile to circumneutral. Central and southern Mo.: Boone, St. Louis, Franklin, Washington, St. Francois, Ste. Genevieve, Cape Girardeau, Iron, Wayne, Butler, Ripley, Carter, Oregon, Shannon, Texas, Phelps, Maries, Osage, Benton, Morgan, Greene, Taney, Stone, Barry, Jasper, Newton, and McDonald counties.

***Crataegus collina* var. *succincta* (Sarg.) Palmer, comb. nov.**

*Crataegus succincta* Sarg.

Thickets, limestone hills, and glades. Calciphile to circumneutral. Eastern Mo., south of the Missouri River: St. Louis, Franklin, St. Francois, and Wayne counties.

***Crataegus collina* var. *secta* (Sarg.) Palmer, comb. nov.**

*Crataegus secta* Sarg.

Thickets, limestone hills, and along small streams. Central and southern Mo., scattered: Miller, Greene, and Jasper counties.

***Crataegus collina* var. *sordida* (Sarg.) Palmer, comb. nov.**

*Crataegus sordida* Sarg.

Thickets, limestone hills. Calciphile to circumneutral. Southern Mo.: Ripley, Carter, Shannon, and Greene counties.

***Crataegus verruculosa* Sarg.**

Thickets and borders of woods. Calciphile to circumneutral. Central and southern Mo., scattered: Boone, Cape Girardeau, Bollinger, Shannon, and Greene counties.

***Crataegus hirtiflora* Sarg.**

Thickets and borders of woods. Calciphile to circumneutral. Southern Mo., local: Taney and Stone counties.

***Crataegus latebrosa* Sarg.**

Thickets and open woods along rocky streams. Calciphile to circumneutral. Southwestern Mo., local: McDonald county.

***Crataegus Lettermanii* Sarg.**

Open woods and thickets along streams. Circumneutral to calciphile. Central and southern Mo., scattered: St. Louis, Ste. Genevieve, and Jasper counties. Probably a hybrid between *Crataegus collina* and *C. mollis*.

***Crataegus viridis* L. Green Haw.**

*Crataegus arborescens* Ell.

*Crataegus Davisii* Sarg.

*Crataegus furcata* Sarg.

*Crataegus larga* Sarg.

*Crataegus Pechiana* Sarg.

Low wet woods, and limestone hills and bluffs with seepage water. Calciphile to circumneutral. Eastern, central, and southern Mo.: Marion, Ralls, Pike, St. Louis, Gasconade, Osage, Cole, Mississippi, Pemiscot, Dunklin, Stoddard, Butler, Ripley, Howell, Jasper, and Newton counties.

*Crataegus viridis* var. *ovata* (Sarg.) Palmer, comb. nov.

*Crataegus ovata* Sarg.

*Crataegus nitens* Sarg.

Occasionally found with the typical form. Marion, Ralls, St. Louis, Stoddard, and Jasper counties.

*Crataegus viridis* var. *lanceolata* (Sarg.) Palmer, comb. nov.

*Crataegus lanceolata* Sarg.

Occasionally found with the typical form. Marion, Ralls, St. Louis, Dunklin, and Jasper counties.

*Crataegus viridis* var. *lutensis* (Sarg.) Palmer, comb. nov.

*Crataegus lutensis* Sarg.

Low woods and rocky glades. Circumneutral. Southwestern Mo.: Bates, Vernon, St. Clair, Jasper, and Newton counties.

*Crataegus viridis* var. *atrorubens* (Ashe) Palmer, comb. nov.

*Crataegus atrorubens* Ashe.

*Crataegus Dawsoniana* Sarg.

Low wet or alluvial woods. East-central Mo.: St. Louis Co.

*Crataegus nitida* (Engelm.) Sarg.

Thickets and borders of woods, limestone hills and bluffs along the Mississippi River. Calciphile. Northeastern Mo.: Marion and Ralls counties.

*Crataegus padifolia* Sarg.

Glades and rocky hillsides. Circumneutral to calciphile. Southwestern Mo.: Ozark, Taney, and Stone counties.

*Crataegus padifolia* var. *incarnata* Sarg.

Rocky open woods. Circumneutral to calciphile. Southwestern Mo.: Stone Co.

*Crataegus neobushii* Sarg.

*Crataegus leioclada* Sarg.

Glades, thickets, and rocky open woods. Circumneutral to calciphile. Southern Mo.: Iron, Ripley, Shannon, Dallas, Taney, and Stone counties.

*Crataegus biltmoreana* Beadle.

*Crataegus villicarpa* Sarg.

Glades and rocky hillsides. Circumneutral to calciphile. Southern Mo.: Shannon, Taney, Stone, and Barry counties.

*Crataegus Margaretta* Ashe.

Thickets, borders of woods, and rocky open ground. Circumneutral to calciphile. Eastern and southern Mo.: Putnam, Schuyler, Adair, Scotland, Clark, Lewis, Knox, Shelby, Marion, Ralls, Pike, Lincoln, St. Louis, St. Francois, Madison, Dallas, Polk, Cedar, Greene, and Christian counties.

*Crataegus sicca* Sarg.

*Crataegus glabrifolia* Sarg.

Thickets and rocky open woods. Circumneutral to calciphile. Eastern and

middle Mo., south of the Missouri River: Franklin, Washington, Bollinger, Wayne, Carter, Cole, and Laclede counties.

**Crataegus pruinosa** (Wendl.) K. Koch.

*Crataegus conjuncta* Sarg.

*Crataegus depressa* Ashe, not Presl, in part.

*Crataegus patrum* Sarg.

Open woods and thickets, limestone hills and along small streams. Circumneutral. General, but commonest in northern and eastern Mo.

**Crataegus pruinosa f. angulata** (Sarg.) Palmer, comb. nov.

*Crataegus arcana* of Sarg., in part, not Beadle.

*Crataegus angulata* Sarg.

Occasionally found with the typical form. Carter Co.

**Crataegus pruinosa var. brachypoda** (Sarg.) Palmer, comb. nov.

*Crataegus brachypoda* Sarg.

Thickets and open woods. Circumneutral to calciphile. Occasionally found with the typical form. Southeastern Mo.: Carter and Ripley counties.

**Crataegus rugosa** Ashe.

*Crataegus onusta* Ashe.

Thickets, pastures, and borders of woods. Circumneutral to calciphile. Northern Mo.: Shelby, Mercer, and Harrison counties.

**Crataegus disjuncta** Sarg.

*Crataegus tumida* Sarg.

Thickets and open woods. Circumneutral to calciphile. East-central and southern Mo.: Franklin, Stoddard, Dent, Shannon, and Jasper counties.

**Crataegus disjuncta var. magnifolia** (Sarg.) Palmer, comb. nov.

*Crataegus magnifolia* Sarg.

Thickets and open woods, limestone hills and along small streams. Circumneutral to calciphile. Southwestern Mo.: Cedar, Dade, Lawrence, Barton, and Jasper counties.

**Crataegus Mackenzii** Sarg.

*Crataegus depressa* Ashe, not Presl, in part.

*Crataegus rubiundula* Sarg.

Thickets, pastures and glades. Circumneutral to calciphile. General: Schuyler, Adair, St. Louis, Franklin, Washington, Iron, Cape Girardeau, Bollinger, Butler, Miller, Jackson, Benton, Greene, and Stone counties.

**Crataegus Mackenzii var. bracteata** (Sarg.) Palmer, comb. nov.

*Crataegus bracteata* Sarg.

*Crataegus aperta* Sarg.

*Crataegus calliantha* Sarg.

*Crataegus rigida* Sarg.

*Crataegus seclusa* Sarg.

*Crataegus seducta* Sarg.

Rocky open woods, thickets, and pastures. Circumneutral to calciphile. Central and southern Mo.: Boone, Franklin, St. Francois, Madison, Bollinger, Carter, Ripley, Phelps, Pulaski, Miller, Camden, Laclede, Dallas, Ozark, Taney, Stone, Barry, Johnson, Jasper, Newton, and McDonald counties.

***Crataegus Gattingeri* Ashe.**

Rocky open woods and thickets. Circumneutral. Southeastern Mo.: Madison, Iron, and Wayne counties.

***Crataegus platycarpa* Sarg.**

Open woods and thickets. Circumneutral to calciphile. Eastern Mo.: Schuyler, Lincoln, Iron, and Wayne counties.

***Crataegus aspera* Sarg.**

Rocky open woods, thickets, and pastures. Circumneutral to calciphile. Southern Mo.: Ripley, Taney, Stone, Barry, and Jasper counties.

***Crataegus locuples* Sarg.**

Open woods and thickets. Circumneutral to calciphile. East-central and Southeastern Mo.: St. Louis, Wayne, and Carter counties. Probably a hybrid between *Crataegus mollis* and *C. pruinosa* or a related species.

***Crataegus mollis* (T. & G.) Scheele. Summer Haw, Turkey Apple.**

*Crataegus macrophylla* Sarg.

*Crataegus lanigera* Sarg.

*Crataegus lasiantha* Sarg.

*Crataegus umbrosa* Sarg.

*Crataegus valens* Ashe.

*Crataegus verna* Ashe.

Open woods and thickets along streams. Circumneutral to calciphile. General, but commonest in northern and central Mo., and apparently absent from some of the Ozark counties.

***Crataegus mollis* f. *dumetosa* (Sarg.) Palmer, comb. nov.**

*Crataegus dumetosa* Sarg.

Occasionally found with the typical form. Jasper and Taney counties.

***Crataegus noelensis* Sarg.**

*Crataegus transmississippiensis* Sarg.

Rocky open woods and thickets along streams. Circumneutral to calciphile. Western Mo., south of the Missouri River: Webster, Benton, Dallas, Greene, Barry, Stone, and McDonald counties.

***Crataegus dispessa* Ashe.**

*Crataegus pyriformis* Britton.

*Crataegus Treleasei* Sarg.

Rocky open woods along streams. Circumneutral to calciphile. Southern Mo.: St. Francois, Shannon, Howell, and Dallas counties.

***Crataegus lanuginosa* Sarg.**

*Crataegus dasyphylla* Sarg.

Open woods, thickets, and pastures; limestone hills and along small streams. Circumneutral to calciphile. Southwestern Mo.: Jasper, Newton, and Barry counties.

***Crataegus Kelloggi* Sarg.**

Thickets along small streams. Circumneutral to calciphile. Scattered: Putnam, Lincoln, St. Louis, and Greene counties. Probably a hybrid between *Crataegus Margaretta* and *C. mollis*.

***Crataegus declivitalis* Sarg.**

Rocky open woods and bluffs. Circumneutral to calciphile. East-central Mo., local: St. Louis and St. Francois counties. Probably a hybrid between *Crataegus mollis* and *C. pruinosa*.

***Crataegus coccinoides* Ashe.**

*Crataegus callicarpa* Sarg.

*Crataegus speciosa* Sarg.

Thickets and open woods; limestone hills. Circumneutral to calciphile. Southern Mo.: St. Louis, Franklin, St. Clair, Cedar, Dade, Jasper, Newton, and Barry counties.

***Crataegus spathulata* Michx.**

*Crataegus apiifolia* var. *flavanthera* Sarg.

*Crataegus spathulata* var. *flavanthera* Sarg. ex Palmer.

Open woods and thickets. Circumneutral. Southwestern Mo.: Taney and Jasper counties.

***Crataegus Marshalli* Eggleston. Parsley Haw.**

*Crataegus apiifolia* (Marsh.) Michx., not Medic.

Low swampy woods. Circumneutral. Southeastern Mo.: Dunklin and Butler counties.

***Crataegus Phaenopyrum* (L.f.) Medic. Washington Thorn.**

*Crataegus cordata* Ait.

Thickets and borders of woods. Circumneutral to calciphile. Central and southern Mo.: Boone, Maries, Washington, Crawford, St. Francois, Wayne, Carter, Ripley, Shannon, Texas, Howell, Greene, Stone, and Jasper counties.

***Crataegus uniflora* Muench.**

*Crataegus trianthophora* Sarg.

*Crataegus tomentosa* Eggleston, not L. (G).

Rocky open woods and glades. Circumneutral to oxylophile. Southern Mo.: Ripley, Shannon, Wayne, Carter, Texas, Douglas, and Ozark counties.

***Crataegus calpodendron* (Ehrh.) Medic.**

*Crataegus tomentosa* of auth., not L. (!).

*Crataegus insperata* Sarg.

*Crataegus obscura* Sarg.

Thickets, open woods, and rocky ground along streams and bluffs. Circumneutral to calciphile. General.

***Crataegus calpodendron* var. *obesa* (Ashe) Palmer, comb. nov.**

*Crataegus obesa* Ashe.

*Crataegus globosa* Sarg. (B & B).

*Crataegus mollicoula* Sarg.

Rocky woods, thickets, and banks of streams. Circumneutral to calciphile. Central and southern Mo.: St. Louis, Iron, Madison, Wayne, Carter, Ripley, Shannon, Oregon, Jackson, Benton, Hickory, Polk, Greene, Christian, Ozark, Taney, Stone, Barry, Jasper, and McDonald counties.

***Crataegus calpodendron* var. *hispidula* (Sarg.) Palmer, comb. nov.**

*Crataegus hispidula* Sarg.

*Crataegus spinulosa* Sarg.



Thickets, open woods, and banks or bluffs of streams. Circumneutral to calciphile. Southern Mo., scattered: St. Francois, Polk, Stone, and Jasper counties.

*Crataegus succulenta* Schrad.

*Crataegus neofluvialis* Ashe (B & B).

*Crataegus macracantha* var. *neofluvialis* (Ashe) Eggleston (G), in part.

*Crataegus ensifera* Sarg.

Thickets and borders of woods, along streams. Circumneutral to calciphile.

Scattered: Harrison, Montgomery, Benton, and Christian counties.

*Crataegus succulenta* var. *pertomentosa* (Ashe) Palmer, comb. nov.

*Crataegus pertomentosa* Ashe (G), B & B).

*Crataegus campestris* Britton.

Rocky open woods, glades, and rocky ground along streams. Calciphile to circumneutral. Scattered, mostly in northern and central Mo.: Mercer, Macon, Clark, Marion, Ralls, Wayne, and Jackson counties.

*Crataegus nuda* Sarg.

Glades and rocky ground along streams. Circumneutral to calciphile. Southwestern Mo., local: Taney Co. Perhaps a hybrid between *Crataegus crus-galli* and *C. succulenta*.

*Crataegus simulata* Sarg.

Open woods and thickets along streams. Circumneutral to calciphile. Southwestern Mo., local: Jasper Co. Probably a hybrid between *Crataegus calpodendron* var. *obesa* and *C. Palmeri*.

*Crataegus incaedua* Sarg.

*Crataegus pudens* Sarg.

*Crataegus swanensis* Sarg.

Rocky open woods, glades, and banks of streams. Circumneutral to calciphile. Southern Mo., scattered: Shannon, Carter, Dallas, and Taney counties.

*Crataegus Vailiae* Britton.

*Crataegus missouriensis* Ashe.

Bluffs and rocky banks of streams. Circumneutral. Southeastern Mo.: Shannon and Ripley counties.

*Crataegus collina* × *viridis*

Thickets, low hills bordering lowlands. Local: Cape Girardeau Co.

*Crataegus Engelmannii* × *uniflora*.

Rocky glades. Local: Ozark Co.

*Waldsteinia fragarioides* (Michx.) Trattinick.

Shaded cherty or sandstone upland slopes. Oxylophile. Southern Mo.: Texas and Douglas counties.

*Fragaria virginiana* Duchesne. Wild Strawberry.

Prairies and open cleared lands. Circumneutral. General but scattered.

*Fragaria virginiana* var. *illinoensis* (Prince) Gray.

*Fragaria Grayana* Vilmorin (S).

Similar situations to the preceding. General and more common.

*Fragaria vesca* L. var. *americana* Porter.

Prairies and borders of woods and thickets. Circumneutral. Scattered: Jasper Co.

**FRAGARIA CHILOENSIS** Duchesne var. **ANANASSA** (Duchesne) Hort. ex Bailey. Garden Strawberry.

*Fragaria grandiflora* Ehrh.

Cultivated and occasionally escaped. Scattered: Andrew Co.

**DUCHESNEA INDICA** (Andr.) Focke. Indian Strawberry.

Prairies, open woods, and waste ground. Circumneutral. Scattered and uncommon: Dunklin and Jackson counties.

**Potentilla arguta** Pursh.

Rocky woods and prairies. Oxylophile to circumneutral. General but scattered: Schuyler, Linn, Lewis, St. Louis, Carter, Worth, Clinton, Jackson, Greene, and Barry counties.

**Potentilla norvegica** L. var. **hirsuta** (Michx.) Lehm. See Rh. 28: 213-214. 1926.

*Potentilla monspeliensis* L. (G), (B & B).

Prairies, meadows, and waste ground. Circumneutral. General.

**Potentilla rivalis** Nutt.

Prairies and open banks. Circumneutral. St. Louis, Jefferson, and Jackson counties.

**Potentilla rivalis** var. **millegrana** (Engelm.) Wats.

Prairies, meadows, and waste ground. Circumneutral. Central Mo., and perhaps more general: St. Louis, Jefferson, Boone, and Jackson counties.

**Potentilla rivalis** var. **pentandra** (Engelm.) Wats.

Prairies and waste ground. Circumneutral. Local: Jackson Co.

**Potentilla paradoxa** Nutt.

Rocky open woods, upland prairies, and banks of streams. Circumneutral. Central and southern Mo.: St. Louis, Perry, Boone, Saline, Carroll, Clay, Jackson, and Holt counties.

**Potentilla Nicolletii** (Wats.) Sheldon.

Sandy bottoms along Missouri and Mississippi Rivers. Oxylophile. Scattered: Perry, Carroll, and Jackson counties.

**POTENTILLA RECTA** L.

Fields, meadows, and waste ground. Indifferent. Introduced and becoming more common. General but scattered: St. Louis, Jefferson, Franklin, Washington, St. Francois, Madison, Iron, Crawford, Phelps, Boone, Saline, Jackson, and Jasper counties.

**Potentilla canadensis** L. var. **villosissima** Fernald, Rh. 33: 187. 1931.

*Potentilla caroliniana* of Rydb., not Poir. (G), (B & B).

Dry open woods, prairies, and open banks. Oxylophile. Southern Mo., eastern Ozark region: Dent, Reynolds, Shannon, Texas, and Howell counties.

**Potentilla simplex** Michx. See Rh. 33: 188. 1931. Cinquefoil.

*Potentilla canadensis* of auth., not L. (G), (B & B).

Rocky open woods, prairies, and waste ground. Oxylophile to circumneutral. General and common.

**Potentilla simplex** var. **calvescens** Fernald, Rh. 33: 189. 1931.

*Potentilla canadensis* var. *simplex* of auth., not (Michx.) T. & G. (G).

*Potentilla simplex* of auth., not Michx. (B & B).

- Rocky open woods and prairies. Circumneutral: St. Louis, Boone, Jackson, Douglas, Greene, and Jasper counties.
- Potentilla simplex* var. *argyrisma* Fernald, Rh. 33: 191. 1931.  
Prairies and dry open ground. Circumneutral. Scattered in southwestern Mo.: Barton and Pettis counties.
- Geum canadense* Jacq.  
Rich woods. Circumneutral. Scattered: Lewis, Monroe, Dallas, Hickory, and Miller counties.
- Geum canadense* var. *camporum* (Rydb.) Fernald & Weatherby, Rh. 24: 49. 1922.  
Red Root.  
*Geum canadense* of auth. in part (G), (B & B).  
Woods and meadows. Circumneutral. General and common.
- Geum laciniatum* Murr. var. *trichocarpum* Fernald, Rh. 37: 293. 1935. Rough Avena.  
*Geum virginianum* of auth. in part, not L. (G).  
Moist woods. Circumneutral. Northern and central Mo.: Scotland, Adair, Marion, Ralls, Monroe, Audrain, and Jackson counties.
- Geum vernum* (Raf.) T. & G. Early Water Avena.  
Moist woods, thickets, and open boggy ground. Circumneutral. General.
- Rubus idaeus* L. var. *strigosus* (Michx.) Maxim. Red Raspberry.  
*Rubus idaeus* var. *aculeatissimus* (C. A. Mey.) Regel & Tiling (G).  
Loess hills in northwestern Mo., and also in Jackson Co., where it is probably introduced: Atchison, Holt, and Jackson counties.
- Rubus occidentalis* L. Black Raspberry.  
Thickets and open woods. Circumneutral. General and probably in every county.
- RUBUS PROCKRUS* P. J. Muell.  
Cultivated and occasionally escaped. Waste ground. Scattered: Jasper Co.
- Rubus allegheniensis* Porter. High-bush Blackberry.  
Rocky open woods, thickets, and bluffs. Circumneutral. General but scattered.
- Rubus alumnus* Bailey, Gent. Herb. 1: 191, fig. 88. 1923.  
Thickets, and banks and bluffs of streams. Circumneutral to oxylophile. Eastern, central, and southern Mo.: Marion, St. Francois, Iron, Madison, Bollinger, Cape Girardeau, Scott, Mississippi, Butler, Wayne, Carter, Shannon, Phelps, Morgan, Jackson, Stone, Jasper, and Newton counties.
- Rubus laudatus* Berger.  
Rocky thickets and borders of woods. Circumneutral. Central and southern Mo., scattered: Boone, Wayne, Saline, Jackson, Barry, and McDonald counties.
- Rubus Deamii* Bailey, Gent. Herb. 2: 463, fig. 203. 1932.  
Thickets and old fields. Circumneutral. Southern Mo.: Texas Co.
- Rubus ostryifolius* Rydb. High-bush Blackberry.  
*Rubus Andrewsianus* Blanchard (G).  
*Rubus argutus* of auth., not Link. (B & B).  
Woods, thickets, fields, and fence rows. Circumneutral. General, and probably in every county.

**Rubus Buahii** Bailey, Gent. Herb. 2: 403. 1932.

High rocky prairies, thickets, and open ground. Circumneutral to oxylophila. Southwestern Mo.: Barton and Jasper counties.

**Rubus frondosus** Bigel.

Thickets and woods along streams. Circumneutral. General but not common: Clark, Marion, Macon, Iron, Phelps, Boone, Cooper, Morgan, Jasper, and Newton counties.

**Rubus abactus** Bailey, Gent. Herb. 2: 452, *figs. 196, 197, 198*. 1932.

Thickets, pastures, and waste ground. Circumneutral. Scattered: Boone, Phelps, and Clay counties.

**Rubus heterophyllus** Willd.

*Rubus recurvans* Blanchard (G).

Dry open ground and borders of woods. Circumneutral. Northwestern Mo.: Nodaway and Jackson counties.

**RUBUS LACINIATUS** Willd.

Cultivated ground. Introduced in Barry Co.

**Rubus missouriensis** Bailey, Gent. Herb. 2: 459, *fig. 200*. 1932.

Prairies and thickets. Circumneutral. Western Mo.: Jackson Co.

**Rubus trivialis** Michx.

*Rubus rubrisetus* Rydb. (G), (B & B), in part.

*Rubus continentalis* Bailey.

Moist thickets and open ground. Circumneutral. Central and southern Mo.: St. Louis, Jefferson, Perry, Cape Girardeau, Bollinger, Madison, Iron, Mississippi, Pemiscot, Butler, Ripley, Carter, Shannon, Phelps, Jackson, Jasper, and McDonald counties.

**Rubus nefrens** Bailey, Gent. Herb. 1: 239, *fig. 111*. 1925.

Prairies, old fields, and open banks. Circumneutral. Central and southern Mo., scattered: Bollinger, Iron, Texas, Jackson, and Jasper counties.

**Rubus flagellaris** Willd. See Gent. Herb. 2: 317. 1932. Dewberry.

*Rubus villosus* Ait. (G).

*Rubus procumbens* Muhl. (B & B).

Open rocky woods, thickets, prairies, and railway embankments. Circumneutral. General and probably in every county.

**Rubus flagellaris** var. *occidualis* Bailey, Gent. Herb. 2: 318. 1932.

Thickets and banks along prairie streams. Circumneutral. General but scattered: Clark, Marion, Audrain, Texas, Saline, Jackson, Vernon, and Jasper counties.

**Rubus invisus** Bailey.

Thickets, prairies, and rocky banks. Circumneutral. Jackson and Morgan counties.

**Agrimonia pubescens** Wallr. See N. Am. Fl. 22: 393. 1913.

*Agrimonia mollis* (T. & G.) Britton (G), (B & B).

Rocky open woods and thickets. Circumneutral. General.

**Agrimonia microcarpa** Wallr.

Low ground along streams. Circumneutral. Eastern Mo., south of the Missouri River, scattered: St. Louis and St. Francois counties.

***Agrimonia gryposepala* Wallr.**

Rocky open woods. Circumneutral. Scattered: Clark, Putnam, Macon, and Douglas counties.

***Agrimonia parviflora* Ait.**

Low open woods, moist thickets, and boggy ground along prairie streams. Circumneutral to oxylophile. General.

***Agrimonia rostellata* Wallr.**

Open woods, rocky slopes, and thickets. Circumneutral. Southern and central Mo., south of a line from St. Louis, Warren, and Boone counties to Jackson Co.

***Agrimonia platycarpa* Wallr.**

Low or rocky woods. Circumneutral. General, but scattered: Marion, Ralls, St. Louis, St. Francois, Shannon, Texas, Greene, Taney, Clay, Jackson, Jasper, and Newton counties.

***Rosa setigera* Michx. Prairie Rose, Climbing Rose.**

Low open woods and moist rocky ground along streams. Circumneutral. Central and southern Mo., scattered: Bollinger, Scott, Dunklin, Butler, Shannon, Pulaski, Saline, Pettis, and Jasper counties.

***Rosa setigera* f. *inermis* Palmer & Steyermark, f. nov.**

Open woods and rocky ground along streams. Occasionally found with the typical form. Circumneutral. Southeastern Mo., scattered: Bollinger and Shannon counties.

A type reedit ramulis inermibus vel raro paucis tenuibus spinis.

The unarmed glabrous form appears to be comparatively rare and we have seen specimens only from southeastern Missouri. It differs from the type only in the canes and branches being entirely unarmed or rarely with a few small scattered spines.

MISSOURI: Patton, Bollinger Co., April 26, 1931, *E. J. Palmer 39093* (Arn. Arb. TYPE); Monteer, Shannon Co., July 30, 1930, *B. F. Bush 11907* (Arn. Arb.).

***Rosa setigera* var. *tomentosa* T. & G.**

Rocky open woods, thickets, and prairies. Circumneutral. General and probably in every county.

***Rosa setigera* var. *serena* Palmer and Steyermark, var. nov.**

Open woods, and rocky banks or bluffs of streams. Circumneutral. Southern Mo.: Iron, Reynolds, Carter, Ripley, Shannon, Ozark, Taney, Christian, Stone, and Barry counties.

A type reedit foliis subter pubescentibus; ramulis inermibus vel raro paucis spinis.

This variety is distinguished from var. *tomentosa* T. & G., which it resembles, in the pubescent under surface of the leaves, and by its smooth spineless canes and branches, although rarely a few small scattered thorns may be found on plants in which nearly all of the branches are entirely unarmed. It appears to be more distinct and constant in its distinguishing characters, as well as more isolated geographically, than the variety based solely on the more or less pubescent character of the leaves. In parts of the Ozark region, in southern Missouri and northern Arkansas, it is the prevailing form of *Rosa setigera*.

MISSOURI: Campbell, Dunklin Co., Oct. 7, 1910, *B. F. Bush* 6385 (Arn. Arb.); Ponder, Ripley Co., July 2, 1933, *Palmer & Steyermark* 41642 (Arn. Arb. TYPE, Mo. Bot. Gard. ISOTYPE); Monteer, Shannon Co., Oct. 6, 1920, *E. J. Palmer* 19346 (Arn. Arb.); Chadwick, Christian Co., Oct. 5-10, 1915, *W. W. Eggleston* 12297 (Arn. Arb.); Galena, Stone Co., Sept. 25, 1923, *E. J. Palmer* 23844, and Sept. 15, 1934, 26135 (Arn. Arb.); Roark, Stone Co., Sept. 28, 1920, *E. J. Palmer* 19213 (Arn. Arb.); Melva, Stone Co., Sept. 17, 1924, *E. J. Palmer* 26194 (Arn. Arb.); Branson, Taney Co., June 8, 1914, *E. J. Palmer* 5397 (Arn. Arb.); Swan, Taney Co., June 9, 1899, *B. F. Bush* 47 (Arn. Arb.); Tecumseh, Ozark Co., Oct. 7, 1927, *E. J. Palmer* 32902 (Arn. Arb.); Gainesville, Ozark Co., June 26, 1928, *E. J. Palmer* 34724 (Arn. Arb.); Isabella, Ozark Co., June 27, 1928, *E. J. Palmer* 3477 (Arn. Arb.); Eagle Rock, Barry Co., July 27, 1926, *E. J. Palmer* 31439 (Arn. Arb.).

ARKANSAS: Cotter, Baxter Co., Sept. 19, 1924, *E. J. Palmer* 26216 (Arn. Arb.); opposite Cotter, Marion Co., June 14, 1914, *E. J. Palmer* 5978 (Arn. Arb.); Eureka Springs, Carroll Co., Sept. 17, 1921, *E. J. Palmer* 20486 (Arn. Arb.); Beaver, Carroll Co., April 30, 1926, *E. J. Palmer* 29843 (Arn. Arb.).

*Rosa rudiuscula* Greene, Leaflets Bot. Obs. & Crit. 2: 134. 1911.

Prairies and thickets. Circumneutral. Northern and western Mo.: Shelby, Pettis, Benton, Gentry, Nodaway, Jackson, Cass, Bates, Vernon, and Jasper counties.

*Rosa suffulta* Greene. See N. Am. Fl. 22: 504. 1913; also Bull. Torr. Bot. Club 50: 65. 1923.

*Rosa heliophila* Greene.

*Rosa pratincola* Greene, not R. Br. (G).

Prairies and thickets. Circumneutral to calciphile. Northern, central, and western Mo., mostly in the prairie region: Scotland, Knox, Boone, Saline, Pettis, Worth, Nodaway, Atchison, Clinton, Platte, Ray, Jackson, Cass, Bates, and Vernon counties.

*Rosa suffulta* var. *valida* Erlanson, Rh. 30: 114. 1928.

Occasionally found with the typical form. Northwestern Mo.: Atchison Co.

*Rosa blanda* Ait. Meadow Rose.

Thickets and open woods. Circumneutral. Northeastern Mo.: Clark and Schuyler counties.

*Rosa relict*a Erlanson, Rh. 30: 116. 1928.

Prairies and thickets. Circumneutral. Northern and central Mo.: Schuyler, Worth, Dekalb, Cooper, Morgan, Lafayette, Johnson, Henry, and St. Clair counties.

*Rosa aucuparia* Rydb. N. Am. Fl. 22: 501. 1918.

Thickets and open woods. Circumneutral. Northern and central Mo., scattered: Clark, Jackson, Cooper, and Morgan counties.

*Rosa conjuncta* Rydb. N. Am. Fl. 22: 505. 1918.

Open banks, loess hills, and bluffs. Calciphile to circumneutral. Northwestern Mo.: Atchison, Nodaway, Dekalb, and Jackson counties.



*Rosa Bushii* Rydb. N. Am. Fl. 22: 506. 1918.

Thickets and open banks. Circumneutral. Northern and central Mo.: Putnam, Jackson, and Lafayette counties.

*Rosa Palmeri* Rydb. N. Am. Fl. 22: 502. 1918.

Prairies and thickets. Circumneutral. Middle and western Mo.: Clinton, Randolph, Jasper, and Stone counties.

*Rosa subserrulata* Rydb. N. Am. Fl. 22: 500. 1918.

Rocky woods and glades. Circumneutral to oxylophile. Central and southern Mo., mostly in the Ozark region and locally north to St. Louis, Pike, and Jackson counties.

*Rosa petiolata* Rydb. N. Am. Fl. 22: 501. 1918.

Thickets and prairies. Circumneutral. Northeastern Mo.: Clark Co.

*Rosa polyanthema* Lunell, Am. Midl. Nat. 3: 138. 1913.

Thickets, open banks, loess hills, and prairies. Circumneutral to calciphile. Northwestern Mo.: Grundy, Caldwell, Nodaway, Atchison, Holt, and Buchanan counties.

*Rosa carolina* L. See Rh. 20: 91. 1918. Pasture Rose.

*Rosa humilis* Marsh. (G).

*Rosa virginiana* of auth. in part, not L. (B & B).

Thickets, open woods, and prairies. Circumneutral. General and probably in every county.

*Rosa carolina* var. *grandiflora* (Baker) Rehder in Bailey, Stand. Cyclop. Hort. 5: 2991. 1916.

*Rosa obovata* Raf.

Rocky open woods and thickets. Circumneutral. General but scattered: Clark, Lewis, Marion, Putnam, Adair, Grundy, Daviess, Shannon, Texas, Wright, Cedar, Hickory, Jasper, and Newton counties.

*Rosa carolina* var. *glandulosa* (Crepin) Farwell, Rept. Mich. Acad. Sci. 21: 366. 1920.

*Rosa serrulata* Raf.

Open woods and thickets. Circumneutral. Scattered: Maries, Schuyler, Clinton, and Jasper counties.

*Rosa carolina* var. *Lyoni* (Pursh) Palmer & Steyermark, comb. nov.

*Rosa Lyoni* Pursh.

Open woods, thickets, and rocky prairies. Circumneutral. General.

*Rosa palustris* Marsh. See Rh. 20: 91. 1918. Swamp Rose.

*Rosa carolina* of auth., not L. (G), (B & B)).

Low swampy woods. Circumneutral. Southeastern Mo., in the lowlands: Cape Girardeau, Bollinger, Madison, Iron, Scott, Mississippi, Stoddard, Dunklin, Butler, Wayne, and Ripley counties.

*Rosa palustris* var. *dasistema* (Raf.) Palmer & Steyermark, comb. nov.

*Rosa dasistema* Raf.

Swamps and low wet woods. Circumneutral. Southeastern Mo.: in the lowlands: Scott, Stoddard, Dunklin, Butler, Wayne, and Iron counties.

**ROSA RUGOSA** Thunb.

Cultivated and escaped into fields and along railroads. Southwestern Mo., local: Greene Co.

**ROSA EGLANTARIA** L. Sweet-brier.

*Rosa rubiginosa* L. (G), (B & B).

Formerly planted in gardens and escaped and established in pastures and waste ground. Scattered: Clark, Marion, Montgomery, St. Louis, St. Francois, Boone, Dekalb, Clinton, Jackson, Johnson, and Jasper counties.

**ROSA CANINA** L. Dog Rose.

Occasionally escaped from gardens to roadsides and waste ground. Dade Co.

**ROSA SPINOSISSIMA** L.

Occasionally escaped to roadsides and waste ground. Boone Co.

**ROSA CENTIFOLIA** L.

An old garden rose, occasionally found as an escape in pastures and along roadsides. Clark Co.

**Prunus serotina** Ehrh. Wild Cherry.

Upland woods and along streams. Circumneutral. General and probably in every county.

**Prunus virginiana** L. Choke Cherry.

Thickets and borders of woods. Circumneutral. Northern and central Mo., mostly north of the Missouri River: Clark, Marion, Shelby, Schuyler, Putnam, Adair, Mercer, Harrison, Caldwell, Worth, Gentry, Clinton, Nodaway, Atchison, Buchanan, Sullivan, Boone, Saline, and Benton counties.

**Prunus angustifolia** Marsh. Chickasaw Plum.

Thickets and pastures. Circumneutral. General but scattered. Perhaps introduced by the Indians in prehistoric times: Grundy, Bollinger, Madison, Butler, Shannon, Jackson, Cass, Johnson, Pettis, Ozark, Stone, and Jasper counties.

**Prunus angustifolia** var. *varians* Wight & Hedrick, Plums of N. Y. p. 87. 1911.

Thickets, roadsides, and along prairie streams. Circumneutral. Central and southern Mo.: Dunklin, Ripley, Oregon, Johnson, Benton, Jasper, and Newton counties.

**Prunus munsoniana** Wight & Hedrick, Plums of N. Y. p. 88. 1911. Wild Goose Plum.

Thickets, prairies, borders of streams, and waste ground. Circumneutral. General but scattered: Adair, Knox, Shelby, Marion, Monroe, Audrain, Boone, St. Louis, Cape Girardeau, Madison, Iron, Dunklin, Butler, Ripley, Shannon, Putnam, Mercer, Harrison, Caldwell, Jackson, Bates, Vernon, St. Clair, Dade, Taney, Stone, Jasper, Newton, and McDonald counties.

**Prunus hortulana** Bailey.

Thickets, open woods, and along streams. Circumneutral. General but commonest in central and southern Mo.

**Prunus hortulana** var. *pubens* Sarg. Trees & Shrubs 2: 248. 1913.

Thickets and open woods. Circumneutral. General but scattered: Marion, Pike, Boone, Howard, Shannon, Ozark, Jackson, and Jasper counties.

*Prunus americana* Marsh. Wild Plum.

Thickets, open woods, and pastures. Circumneutral. General.

*Prunus lanata* (Sudw.) Mack. & Bush.

*Prunus arkansana* Sarg.

Thickets and open woods. Circumneutral. General. *Prunus Palmeri* Sarg., found in southwestern Mo. and later referred to this species, may be distinct or possibly a hybrid between this and *P. hortulana*.

*Prunus mexicana* Wats. Big Tree Plum.

Rocky open woods. Circumneutral. Southern Mo.: Dunklin, Butler, Shannon, Ozark, Taney, and Stone counties.

*PRUNUS SPINOSA* L.

Introduced in thickets. Jasper Co.

*PRUNUS MAHALEB* L. Perfumed Cherry.

Thickets, pastures, and roadsides. Used as grafting stock by nurserymen and often escaped. Scattered: Marion, Gasconade, Jackson, and Jasper counties.

*PRUNUS CERASUS* L. Sour Cherry.

Thickets and roadsides. Cultivated and occasionally escaped. Scattered: Marion, Holt, Jackson, and Barry counties.

#### FAM. LEGUMINOSAE

*Acacia angustissima* (Mill.) Ktze. Prairie Acacia.

Glades and rocky open ground. Circumneutral to calciphile. Southwestern Mo., local: Barry Co.

*Acacia angustissima* var. *hirta* (Nutt.) Robinson.

Glades, rocky hillsides, and exposed ledges along bluffs. Circumneutral to calciphile. Southwestern Mo.: Jasper, Newton, McDonald, Barry, Stone, and Taney counties.

*Desmanthus illinoensis* (Michx.) MacM. False Sensitive Plant.

Rocky open ground, thickets, and prairies. Circumneutral to oxylophile. General but apparently absent from much of the Ozark region.

*Desmanthus leptolobus* T. & G.

Low open ground. Circumneutral. Southeastern Mo.: Cape Girardeau Co. Perhaps introduced.

*Schrankia uncinata* Willd. Sensitive Brier.

Rocky prairies, open banks, and glades. Circumneutral to calciphile. General but absent from many of the eastern and northern counties: Putnam, Marion, Shelby, Macon, Audrain, Boone, Cole, Gasconade, Jefferson, Washington, Crawford, Iron, Wayne, Carter, Ripley, Oregon, Shannon, Howell, Dent, Osage, Phelps, Pulaaki, Maries, Moniteau, Morgan, Laclede, Dallas, Wright, Webster, Hickory, Ozark, Douglas, Greene, Taney, Stone, Jackson, Johnson, Vernon, Barton, Jasper, Newton, and McDonald counties.

*Gymnocladus dioica* (L.) Koch. Kentucky Coffee-tree.

Woods, chiefly along small streams: sometimes in alluvial bottoms. Circumneutral. General but nowhere very common.

**Gleditsia triacanthos L.** Honey Locust.

Woods, chiefly along small streams; sometimes in low alluvial ground. Circumneutral. General and probably in every county.

**Gleditsia triacanthos var. inermis Pursh.**

Occasionally found with the common form, mostly in eastern and southern Mo.: Harrison, Mercer, Shelby, Monroe, St. Louis, Jefferson, Franklin, Washington, Iron, Mississippi, and McDonald counties.

**Gleditsia aquatica Marsh.** Water Locust.

Low wet woods and swamps. Circumneutral. Southeastern Mo., in the lowlands and locally north along the Mississippi River: St. Charles, St. Louis, Jefferson, Cape Girardeau, Bollinger, Scott, Mississippi, New Madrid, Dunklin, Butler, and Ripley counties.

**Hoffmanseggia Jamesii T. & G.**

Dumps and waste ground. Found as a waif in Jasper Co.

**Cassia Medagerei Shafer.**

Thickets, open woods, and along rocky branches. Circumneutral. General. This has often been confused with *Cassia marilandica*, an eastern species which it resembles.

**Cassia Tora L.**

Rocky open ground along streams, and sandy bottoms. Oxylophile. Southeastern Mo.: Dunklin Co., and also introduced in Jackson Co.

**CASSIA OCCIDENTALIS L.** Coffee Weed.

Low alluvial ground. Circumneutral. Scattered: Introduced in Jackson and New Madrid counties.

**Cassia fasciculata Michx.** Partridge Pea.

*Cassia Chamaecrista* of auth., not L. (G).

*Chamaecrista fasciculata* (Michx.) Greene (B & B).

Thickets, glades, and rocky prairies. Circumneutral to oxylophile. General.

**Cassia fasciculata f. Jensenii Palmer & Steyermark, f. nov.**

Rarely occurring with the typical form. Local: Franklin Co.

A typo recedit petalis albis.

MISSOURI: Gray Summit, Franklin Co., Aug. 20, 1928, *L. P. Jensen* (Mo. Bot. Gard. TYPE). See Jensen, Mo. Bot. Gard. Bull. 19: 38-39. 1931.

Differs from the typical form in having white instead of yellow petals.

**Cassia fasciculata var. robusta (Pollard) Macbride, Contr. Gray Herb. N. 8. 59: 24. 1919.**

*Cassia Chamaecrista* var. *robusta* Pollard (G).

*Chamaecrista fasciculata* (Michx.) Greene, in part (B & B).

Occasionally found with the typical form. Circumneutral. Scattered: Lincoln, St. Charles, St. Louis, Perry, Pemisicot, Boone, and Polk counties.

**Cassia fasciculata var. depressa (Pollard) Macbride.**

*Cassia depressa* Pollard (G).

*Chamaecrista depressa* (Pollard) Greene (B & B).

Rocky open and alluvial ground. Circumneutral. Eastern Mo.: Washington Co.

**Cassia nictitans** L. Sensitive Pea.

Rocky woods, thickets, and prairies. Oxylophile to circumneutral. Central and southern Mo. south and east of a line from Lincoln, Montgomery, Boone, and St. Clair counties to Vernon Co.

**Cercis canadensis** L. Redbud.

Thickets and borders of woods, along rocky streams and bluffs. Circumneutral. General and probably in every county.

**Baptisia leucantha** T. & G. White Wild Indigo.

Prairies, glades, and rocky hillsides. Circumneutral. General.

**Baptisia vespertina** Rydb. Blue False Indigo.

*Baptisia australis* of auth., not R. Br. (G), (B & B).

Rocky prairies and glades. Calciphile to circumneutral. Central and southern Mo.: St. Louis, Jefferson, Franklin, St. Francois, Ste. Genevieve, Ozark, Taney, Stone, Barry, Greene, Hickory, Cedar, Vernon, Jasper, and Newton counties, and also introduced in Jackson Co.

**Baptisia leucophaea** Nutt.

*Baptisia bracteata* of auth., not (Muhl.) Ell. (G), (B & B).

Rocky prairies, meadows, and open woods. Circumneutral. General.

**Baptisia leucophaea** var. *laevicaulis* Gray.

Sometimes found with the typical form. Central and southern Mo.

**Baptisia leucophaea** × *vespertina*.

Rarely found with the parent species. Jasper Co.

**Baptisia sphaerocarpa** Nutt.

Introduced from farther south, along railways. Circumneutral. Scattered: St. Louis and Barry counties.

**Cladrastis lutea** (Michx. f.) Koch. Yellow Wood.

Along high rocky bluffs of White River and its tributaries. Circumneutral to calciphile. Southwestern Mo.: Taney, Stone, and Barry counties.

**Crotalaria sagittalis** L. Rattle-box.

Prairies, glades, and open sandy or rocky ground. Circumneutral to oxylophile. General.

**TRIFOLIUM ARVENSE** L. Rabbit-foot Clover.

Waste ground and along roadsides and railroads. Indifferent. Scattered: St. Louis, Phelps, Texas, Greene, Barry, and Jasper counties.

**TRIFOLIUM INCARNATUM** L. Crimson Clover.

Fields and waste ground. Indifferent. Scattered in middle and southeastern Mo.: Boone, St. Louis, Jefferson, Ste. Genevieve, Bollinger, Iron, Dunklin, Ripley, and Oregon counties.

**TRIFOLIUM PRATENSE** L. Red Clover.

Fields, meadows, waste and cultivated ground. Indifferent. General and common.

**Trifolium reflexum** L. Buffalo Clover.

Rocky open woods, glades, and prairies. Oxylophile to circumneutral. Northwestern, central, and southern Mo.: St. Louis, Jefferson, St. Francois, Ste. Genevieve, Iron, Madison, Bollinger, Wayne, Carter, Ripley, Oregon, Washington,

Howell, Shannon, Texas, Dent, Crawford, Maries, Phelps, Cooper, Morgan, Webster, Douglas, Atchison, Johnson, Greene, and Jasper counties.

***Trifolium reflexum* var. *glabrum* Lojacano.**

Frequently occurring with the typical form, in similar situations. Central, southern, and western Mo.: Warren, St. Louis, Jefferson, Franklin, Phelps, Cole, Atchison, Jackson, Cass, Webster, Greene, Barry, and Jasper counties.

***Trifolium stoloniferum* Muhl. Running Buffalo Clover.**

Open woods and prairies. Circumneutral. Central and southern Mo., scattered: Boone, St. Louis, Wayne, and Jasper counties.

***Trifolium repens* L. White Clover.**

Fields, pastures, and waste ground. Indifferent. General and common.

***TRIFOLIUM HYBRIDUM* L. Alsike Clover.**

Fields, roadsides, and waste ground. General and common.

***Trifolium carolinianum* Michx.**

Glades and rocky prairies. Circumneutral to oxylophile. Southwestern Mo.: Jasper and Newton counties.

***TRIFOLIUM AGRARIUM* L. Yellow Hop Clover.**

Fields and waste ground. Scattered: St. Charles and Christian counties.

***TRIFOLIUM PROCUMBENS* L. Low Hop Clover.**

Rocky open ground, roadsides, and waste ground: Circumneutral. Eastern, central, and southern Mo. south of a line from Marion and Boone counties to Caldwell Co.

***TRIFOLIUM DUBIUM* Sibth. Little Hop Clover.**

Roadsides and waste ground. Indifferent. Scattered: Boone, Johnson, Greene, and Jasper counties.

***TRIFOLIUM RESUPINATUM* L.**

Waste and cultivated ground. Introduced in Johnson Co.

***MELILOTUS OFFICINALIS* (L.) Lam. Yellow Sweet Clover.**

Along roadsides, railroads, and in waste ground. Indifferent. General. Recently introduced in many places.

***MELILOTUS ALBA* Desf. White Sweet Clover.**

Roadsides, railroads, and waste ground. Indifferent. General and common.

***MEDICAGO SATIVA* L. Alfalfa.**

Commonly cultivated in recent years, and often escaping along railroads and roadsides. Indifferent. General.

***MEDICAGO LUPULINA* L. Black Medick.**

Roadsides and waste ground. Indifferent. General.

***MEDICAGO HISPIDA* Gaertn. Bur Clover.**

Introduced along railroads and in waste ground. Jackson Co.

***LOTUS CORNICULATUS* L. Ground Honeysuckle.**

Waste and cultivated ground. Introduced in Boone and Clay counties.

***Lotus americanus* (Nutt.) Bisch. Prairie Trefoil.**

*Hosackia americana* (Nutt.) Piper (G), (B & B).

Prairie swales and glades, and also frequently adventized along roadsides and



railroads. Circumneutral. Central and southern Mo.; mostly in the western prairie region: Jefferson, Saline, Jackson, Henry, Vernon, Barton, Jasper, Newton, and McDonald counties.

***Psoralea Onobrychis* Nutt. French Grass.**

Open woods, low alluvial thickets, and river banks. Circumneutral. Northeastern and east-central Mo.: Clark, Marion, Ralls, Shelby, St. Louis, Jefferson, and Franklin counties.

***Psoralea pedunculata* (Mill.) Vail.**

Open rocky woods, glades, and prairies. Circumneutral to oxylophile. Central and southern Mo.: St. Louis, Jefferson, Franklin, St. Francois, Washington, Crawford, Iron, Dent, Shannon, Reynolds, Phelps, Maries, Pulaski, Texas, Laclede, Howell, Camden, Wright, Webster, Douglas, Hickory, Greene, Lawrence, Bates, Vernon, Jasper, Newton, and McDonald counties.

***Psoralea tenuiflora* Pursh. Scurfy Pea.**

*Psoralea tenuiflora* var. *floribunda* (Nutt.) Rydb. (G).

*Psoralea floribunda* Nutt. (B & B).

Glades, rocky or open prairies, and open woods. Calciphile to circumneutral. Southern and central Mo. north to Monroe, Daviess, and Clinton counties.

***Psoralea argophylla* Pursh.**

Prairies and loess hills. Calciphile to circumneutral. Northwestern and west-central Mo.: Atchison, Holt, and Jackson counties.

***Psoralea esculenta* Pursh. Prairie Turnip, Indian Bread-root.**

Rocky prairies and glades. Calciphile to circumneutral. Central and southern Mo.: St. Louis, Jefferson, Franklin, Miller, Dallas, Greene, Ozark, Taney, Cedar, Jackson, and Bates counties.

***Dalea alopecuroides* Willd.**

*Parosela leporina* (Ait.) Rydb. var. *alba* (Michx.) Macbride, Contr. Gray Herb. 65: 17. 1922.

*Parosela Dalea* (L.) Britton (B & B).

Loess hills, sandy open ground, and alluvial ground along rivers. Circumneutral. Northern, central, and eastern Mo., scattered: Putnam, Boone, St. Louis, Jefferson, Mississippi, Atchison, Holt, Andrew, Buchanan, Clay, Jackson, Cass, and Johnson counties.

***Dalea enneandra* Nutt.**

*Parosela enneandra* (Nutt.) Britton (B & B).

Loess hills and plains. Calciphile to circumneutral. Northwestern Mo.: Atchison and Holt counties.

***Petalostemum purpureum* (Vent.) Rydb. Red Tassel-flower, Prairie Clover.**

Prairies, glades, and rocky hillsides. Calciphile to circumneutral. General.

***Petalostemum purpureum* var. *pubescens* Gray.**

Occasionally found with the typical form. Scattered: Shannon, Taney, Barry, Jasper, and McDonald counties.

***Petalostemum multiflorum* Nutt.**

Rocky prairies and along railroads. Adventized from farther west. Jackson Co.

- Petalostemum candidum** Michx. White Tassel-flower, White Prairie Clover.  
Prairies, glades, and rocky hillsides. Calciphile to circumneutral. General.
- Tephrosia virginiana** (L.) Pers. Goat's Rue, Hoary Pea.  
Rocky open woods, prairies, and glades. Circumneutral to oxylophile. General: common in the Ozark region and scattered northward; known north of the Missouri River in Putnam, Monroe, Warren, Boone, and Howard counties.
- Tephrosia virginiana** var. *holosericea* (Nutt.) T. & G.  
Occasionally found with the typical form. Dallas and Cedar counties.
- Sesbania macrocarpa** Muhl.  
Low sandy fields and sand bars of streams. Oxylophile. Southern Mo., in the southeastern lowlands and locally along White River: Mississippi, New Madrid, Pemiscot, Dunklin, and Barry counties.
- Wisteria macrostachya** Nutt.  
Low woods along streams, and borders of swamps and bayous. Circumneutral. Southeastern Mo.: Scott, Mississippi, Pemiscot, Dunklin, Butler, and Ripley counties, and also escaped from cultivation in Adair Co.
- Wisteria frutescens** (L.) Poir.  
Cultivated, and escaped in Daviess Co.
- Robinia Pseudo-Acacia** L. Black Locust.  
Rocky upland woods, pastures, and waste ground. Circumneutral. General; native in parts of the Ozark region and escaped from cultivation elsewhere.
- Astragalus caryocarpus** Ker. Ground Plum.  
Prairies and glades. Circumneutral to calciphile. Western Mo., scattered: Atchison, Jackson, Vernon, Greene, and Jasper counties.
- Astragalus mexicanus** A. DC. Ground Plum.  
Rocky prairies, glades, ledges along bluffs, and rocky open woods. Calciphile to circumneutral. Central and southern Mo., south and east of a line drawn from St. Charles, Montgomery, Boone, Morgan, and Henry counties to Jasper Co.
- Astragalus canadensis** L. Rattle Weed.  
Open woods, thickets, and prairies. Circumneutral. General: Schuyler, Knox, Marion, Ralls, St. Charles, St. Louis, Jefferson, Mississippi, Ripley, Oregon, Shannon, Texas, Howell, Phelps, Pulaski, Miller, Morgan, Boone, Sullivan, Linn, Mercer, Harrison, Atchison, Dekalb, Jackson, St. Clair, Dallas, Greene, Cedar, Stone, and Jasper counties.
- Astragalus distortus** T. & G.  
Rocky prairies and glades. Calciphile to circumneutral. General but scattered: Marion, Ralls, Monroe, St. Louis, Jefferson, Franklin, Scott, Butler, Shannon, Moniteau, Miller, Montgomery, Boone, Livingston, Jackson, Cass, Johnson, Hickory, Polk, Vernon, Dade, Greene, Jasper, and McDonald counties.
- Astragalus lotiflorus** Hook.  
Loess hills and plains. Calciphile to circumneutral. Northwestern Mo.: Atchison and Holt counties.
- Oxytropis plattensis** Nutt. Loco Weed.  
*Oxytropis Lamberti* Pursh (G), (B & B).  
Loess hills. Calciphile. Northwestern Mo.: Atchison and Holt counties.

***Amorpha fruticosa* L. False Indigo.**

Low open woods, thickets, and banks of streams. Circumneutral. General and probably in every county.

***Amorpha fruticosa* var. *tennesseensis* (Shuttlw.) Palmer, Jour. Arnold Arb. 12: 192, fig. 20b. 1931.**

*Amorpha tennesseensis* Shuttlw.

Rocky banks and moist ground along prairie streams. Circumneutral. Southern Mo.: Shannon, Ozark, Taney, Stone, Barry, Jasper, and McDonald counties.

***Amorpha fruticosa* var. *angustifolia* Pursh.**

Wet ground along streams and borders of ponds. Circumneutral. Central and southern Mo.

***Amorpha fruticosa* var. *oblongifolia* Palmer, Jour. Arnold Arb. 12: 192, fig. 20c. 1931.**

Wet ground, thickets, and along prairie streams. Circumneutral. Western Mo.: Atchison and Jasper counties.

***Amorpha croceolanata* Wats.**

Sandy open ground. Circumneutral to oxylophile. Southeastern Mo.: Dunklin Co.

***Amorpha canescens* Pursh. Lead Plant.**

Rocky open woods, prairies, and glades. Oxylophile to circumneutral. General.

***Amorpha canescens* var. *glabrata* Gray.**

Rocky open woods, bluffs, and glades. Oxylophile to circumneutral. Central and southern Mo.: Maries, Boone, Macon, Benton, Hickory, Dallas, Morgan, Ozark, Stone, and Jasper counties.

***Amorpha brachycarpa* Palmer, Jour. Arnold Arb. 12: 171, pl. 36, fig. 6. 1931.**

Rocky open woods and glades. Circumneutral. Southwestern Mo.: Stone Co.

***Glycyrrhiza lepidota* (Nutt.) Pursh. Wild Liquorice.**

Loess hills, prairies, and waste ground. Calciphile to circumneutral. Native in northwestern Mo. and introduced in other parts of the state. Scattered: Marion, St. Louis, Jefferson, Moniteau, Gentry, Atchison, Holt, Andrew, Jackson, and Jasper counties.

***Coronilla varia* L. Crown Vetch.**

Roadsides and waste ground. Circumneutral. St. Louis and Taney counties. Introduced near St. Louis by Fendler.

***Desmodium acuminatum* (Michx.) DC. Beggar's Lice, Beggar's Ticks.**

*Desmodium grandiflorum* (Walt.) DC. (G).

*Meibomia grandiflora* (Walt.) Ktze. (B & B).

Rocky open or rich low woods and bluffs. Circumneutral. General.

***Desmodium nudiflorum* (L.) DC. Tick Trefoil.**

Rocky woods. Oxylophile. Central and southern Mo., south of a line drawn from Ralls and Randolph counties to Jackson Co.

***Desmodium pauciflorum* (Nutt.) DC.**

Rich or rocky woods and thickets. Circumneutral. Central and southern Mo.: Boone, Franklin, St. Louis, Jefferson, Scott, Mississippi, New Madrid, Dunklin, Stoddard, Butler, Ripley, Pulaaki, Greene, Jasper, and Newton counties.

***Desmodium rotundifolium* (Michx.) DC.**

Rocky open woods. Oxylophile. Central and southern Mo., south and east of a line drawn from St. Louis, Warren, Boone, Morgan, and Hickory counties to Jasper Co.

***Desmodium ochroleucum* M. A. Curtis.**

Open woods and low open ground. Circumneutral. Southeastern Mo.: Stoddard and Shannon counties.

***Desmodium canescens* (L.) DC. Beggar's Lice, Beggar's Ticks.**

Dry open woods and thickets. Circumneutral to oxylophile. General.

***Desmodium canescens* var. *hirsutum* (Hook.) Robinson.**

In similar situations to the typical form. Circumneutral to oxylophile. Scattered: St. Louis, Jefferson, Butler, Boone, Texas, Greene, Jasper, and Jackson counties.

***Desmodium bracteosum* (Michx.) DC.**

Dry open woods and thickets. Circumneutral to calciphile. General.

***Desmodium bracteosum* var. *longifolium* (T. & G.) Robinson.**

In similar situations to the typical form. Scattered: Marion, St. Louis, Gentry, Boone, Jackson, and Jasper counties.

***Desmodium illinoense* Gray.**

Prairies, glades, and rocky, open woods. Circumneutral to oxylophile. Northern, central, and western Mo., absent from the Ozark region: Adair, Lewis, Marion, Ralls, Monroe, Crawford, Boone, Saline, Pettis, Worth, Gentry, Dekalb, Clinton, Caldwell, Jackson, Greene, and Jasper counties.

***Desmodium laevigatum* (Nutt.) DC.**

Rocky open woods. Circumneutral to oxylophile. Eastern and southern Mo.: Ralls, Ste. Genevieve, Iron, Reynolds, Shannon, Phelps, Pulaski, Douglas, Ozark, Taney, Barry, and Jasper counties.

***Desmodium viridiflorum* (L.) Beck.**

Open woods, glades, and rocky prairies. Circumneutral to oxylophile. Southern Mo.: Scott, Dunklin, Ripley, Shannon, Howell, Barry, and McDonald counties.

***Desmodium Dillenii* Darl.**

Rocky open woods, thickets, and glades. Oxylophile to circumneutral. General.

***Desmodium paniculatum* (L.) DC.**

Rich woods and thickets and alluvial ground. Circumneutral to calciphile. General.

***Desmodium paniculatum* var. *pubens* T. & G.**

In similar situations to the typical form. General.

***Desmodium paniculatum* var. *angustifolium* T. & G.**

In similar situations to the typical form. General.

***Desmodium sessilifolium* (Torr.) T. & G.**

Rocky open woods, prairies, and glades. Circumneutral to calciphile. General.

***Desmodium canadense* (L.) DC.**

Prairies and open thickets. Circumneutral. Northern, central, and western Mo., apparently absent from the Ozark region: Clark, Schuyler, St. Louis, Mercer, Saline, Jackson, and Jasper counties.

***Desmodium rigidum* (Ell.) DC.**

Rocky woods, glades, and prairies. Oxylophile to circumneutral. Southern and central Mo.: Lincoln, St. Louis, Jefferson, St. Francois, Dunklin, Butler, Iron, Dent, Crawford, Pulaski, Cole, Howell, Moniteau, Boone, Douglas, Taney, Barry, Jasper, Newton, and McDonald counties.

***Desmodium obtusum* (Muhl.) DC.**

Dry open woods, glades, and sandy or rocky open ground. Oxylophile. Central and southern Mo.: Boone, St. Louis, Jefferson, Scott, Mississippi, Dunklin, Stoddard, Reynolds, Shannon, Dent, Phelps, Pulaski, Howell, Maries, Dallas, Hickory, Henry, Pettis, Greene, Ozark, Stone, Barry, Jasper, and McDonald counties.

***Desmodium marilandicum* (L.) DC.**

Dry open woods and thickets. Oxylophile. Central and southern Mo.: Montgomery, Warren, Lincoln, St. Louis, Jefferson, Franklin, Iron, Wayne, Ripley, Reynolds, Dent, Crawford, Maries, Phelps, Pulaski, Camden, Greene, Taney, Stone, Barry, Jackson, Jasper, Newton, and McDonald counties.

***Desmodium canadense* × *Dillenii*.**

Rarely found with the parent species. Local: St. Louis Co.

***Lespedeza procumbens* Michx. Bush Clover.**

Dry rocky woods. Oxylophile to circumneutral. Southern and central Mo. south and east of a line drawn from St. Louis, Boone, and Hickory counties to Jasper Co.

***Lespedeza repens* (L.) Bart.**

Rocky open woods. Oxylophile to circumneutral. Southern and central Mo. south of a line drawn from Lincoln, Boone, and Saline counties to Cass Co.

***Lespedeza violacea* (L.) Pers. Bush Clover.**

*Lespedeza violacea* var. *prairea* Mack. & Bush (G).

Rocky or dry open woods, thickets, and rocky prairies. Circumneutral. General.

***Lespedeza Manniana* Mack. & Bush.**

Rocky woods and glades. Circumneutral. Scattered in central and southern Mo.: Jefferson, Newton, and Jackson counties. Probably a hybrid between *Lespedeza virginica* and *L. capitata*.

***Lespedeza Stuevei* Nutt. See Rh. 26: 28. 1924.**

Dry open woods, thickets, and prairies. Oxylophile to circumneutral. Southern Mo.: Ste. Genevieve, Scott, Mississippi, Stoddard, Dunklin, Shannon, Phelps, Pulaski, Howell, Ozark, Taney, Vernon, Barry, Jasper, Newton, and McDonald counties.

***Lespedeza Stuevei* var. *angustifolia* Britton. See Rh. 26: 29. 1924.**

*Lespedeza Stuevei* var. *neglecta* Britton (G).

Occasionally found with the typical form. Scattered in southern and central Mo.: St. Louis, Iron, and Pulaski counties. Probably a hybrid between *Lespedeza virginica* and *Lespedeza Stuevei*.

***Lespedeza virginica* (L.) Britton. Bush Clover.**

Rocky or dry open woods, thickets, prairies, and glades. Circumneutral to oxylophile. General and common.

***Lespedeza intermedia* (Wats.) Britton. See Rh. 26: 29-31. 1924.**

*Lespedeza frutescens* Britton, not *Hedysarum frutescens* L. (G), (B & B).

Rocky open woods and thickets. Circumneutral to oxylophile. Southern and east-central Mo.: St. Louis, Ste. Genevieve, Bollinger, Iron, Butler, Reynolds, Shannon, Dent, Phelps, Henry, Taney, Stone, Barry, Jasper, and McDonald counties.

***Lespedeza simulata* Mack. & Bush.**

Dry open woods and rocky prairies. Circumneutral. Southwestern Mo.: Barry, Jasper and Newton counties. Probably a hybrid between *Lespedeza virginica* or *Lespedeza Stuevei* and *Lespedeza capitata*.

***Lespedeza acuticarpa* Mack. & Bush.**

Rocky open woods, prairies, and glades. Circumneutral. Southern and western Mo.: Iron, Shannon, Barry, and Jackson counties. Probably a hybrid between *Lespedeza virginica* or *Lespedeza frutescens* and *Lespedeza violacea*.

***Lespedeza Nuttallii* Darl.**

Dry rocky woods and thickets. Circumneutral to oxylophile. Southern Mo.: Iron, Phelps, Miller, Wright, and Jasper counties.

***Lespedeza hirta* (L.) Hornem. Hairy Bush Clover.**

Rocky open woods, thickets, and glades. Oxylophile. Central and southern Mo. south and east of a line drawn from St. Louis, Warren, Morgan, and Cedar counties to Barton Co.

***Lespedeza capitata* Michx.**

Rocky prairies, thickets, and glades. Oxylophile to circumneutral. General.

***Lespedeza capitata* var. *longifolia* (DC.) T. & G.**

Sometimes found with the typical form. Scattered: St. Louis, Jackson, and Jasper counties.

***Lespedeza capitata* var. *sericea* H. & A.**

In similar situations to the typical form, and in many places more common. Circumneutral. General.

***LESPEDEZA STRIATA* (Thunb.) H. & A. Japanese Clover.**

Dry open woods and roadsides; generally in rocky or gravelly ground. Oxylophile. Eastern, southern, and central Mo.

***LESPEDEZA STIPULACEA* Maxim. Corean Clover.**

Open woods, roadsides, and waste ground. Indifferent. General. Recently introduced and being planted in many places along roadsides for a ground cover, and likely to spread widely as an introduced species.

***Stylosanthes biflora* (L.) BSP.**

Rocky open woods, prairies, and glades. Oxylophile to circumneutral. Central and southern Mo.: Boone, Lincoln, St. Charles, St. Louis, Jefferson, Franklin, Washington, Iron, Reynolds, Dunklin, Ripley, Oregon, Shannon, Dent, Maries, Texas, Howell, Laclede, Wright, Taney, Stone, Greene, Polk, Hickory, Ozark, Jackson, Vernon, Barton, Jasper, Newton, McDonald, and Barry counties.



*Stylosanthes biflora* var. *hispidissima* (Michx.) Pollard & Ball.

Similar situations to the preceding. Oxylophile to circumneutral. Central and southern Mo.: Mississippi, Iron, Reynolds, Carter, Oregon, Howell, Douglas, Dent, Maries, Pulaski, Boone, Henry, Laclede, Dallas, Hickory, Greene, Stone, Barry, and McDonald counties.

*Vicia sativa* L. Spring Vetch.

Waste ground and roadsides. Escaped from cultivation. Indifferent. Scattered: St. Louis, Jefferson, and Jackson counties.

*Vicia villosa* Roth. Winter Vetch.

Fields, waste ground, and roadsides. Indifferent. Scattered: Boone, St. Louis, Jefferson, Texas, Howell, Livingston, Clay, and Jasper counties.

*Vicia ludoviciana* Nutt.

Rich rocky woods. Circumneutral. Southwestern Mo.: Greene and McDonald counties.

*Vicia caroliniana* Walt.

Rich woods and alluvial banks. Oxylophile to circumneutral. East-central and southern Mo.: Franklin, Washington, Bollinger, Madison, Wayne, Reynolds, Carter, Ripley, Oregon, Howell, Texas, Phelps, Pulaski, Dallas, Wright, Douglas, Greene, Christian, Taney, Barry, Newton, and McDonald counties.

*Vicia americana* Muhl.

Open woods and thickets. Circumneutral. Northern and central Mo.: St. Louis, Jefferson, Atchison, Holt, Platte, Jackson, and Bates counties.

*Vicia angustifolia* (L.) Reichard.

Fields and waste ground. Indifferent. Introduced in Boone and Jackson counties.

*Vicia micrantha* Nutt.

Thickets and prairies. Circumneutral. Introduced in Jackson Co.

*Vicia tetrasperma* (L.) Moench.

Roadsides and waste ground. Indifferent. Introduced in Jackson Co.

*Lathyrus venosus* Muhl. var. *intonsus* Butters & St. John, Rh. 19: 158. 1917.

Bushy Vetch.

Rocky open woods. Circumneutral. East-central and southern Mo.: St. Louis, Crawford, Wayne, Carter, Shannon, Howell, and Barry counties.

*Lathyrus pusillus* Ell.

Rocky open woods and chert glades. Oxylophile. Southwestern Mo.: Jasper and Newton counties.

*Lathyrus palustris* L. See Rh. 13: 50. 1911. Marsh Pea.

Open woods and moist banks. Circumneutral. Central Mo., scattered: Boone, Ray, and Jackson counties.

*Lathyrus palustris* var. *myrtifolius* (Muhl.) Gray.

Open woods and moist banks. Oxylophile to circumneutral. Central and southeastern Mo.: Boone, St. Louis, Jefferson, Scott, and Iron counties.

*Apios americana* Medic. See Rh. 36: 88-89. 1934. Groundnut.

*Apios tuberosa* Moench (G), (B & B).

Thickets and borders of streams. Circumneutral to oxylophile. General.

**Phaseolus polystachyus** (L.) BSP. Wild Bean.

Rocky open woods and thickets. Circumneutral. East-central and southern Mo.: St. Louis, Jefferson, Iron, Dunklin, Ripley, Phelps, Pulaski, Dallas, Douglas, Greene, Jasper, and McDonald counties.

**VIGNA SINENSIS** (L.) Endl. Cow Pea.

Occasionally escaped from cultivation. Jackson Co.

**Strophostyles helvola** (L.) Britton.

Rich rocky woods and thickets. Circumneutral. General.

**Strophostyles helvola** var. **missouriensis** (Wats.) Britton.

Moist alluvial ground, woods, and thickets. Circumneutral. General but scattered: Clark, Boone, Gasconade, Lincoln, St. Charles, St. Louis, Jefferson, Mississippi, New Madrid, Pemiscot, Dunklin, Butler, Clay, Jackson, and Dekalb counties.

**Strophostyles umbellata** (Muhl.) Britton.

Moist woods and thickets. Circumneutral to oxylophile. General but scattered: Clark, Marion, Boone, St. Louis, Jefferson, Ste. Genevieve, Iron, Dunklin, Butler, Shannon, Phelps, Taney, Clay, and Jasper counties.

**Strophostyles pauciflora** (Benth.) Wats.

Open woods, thickets, and prairies. Circumneutral to oxylophile. General.

**Clitoria mariana** L. Turkey Pea, Butterfly Pea.

Rocky open woods and glades. Oxylophile. Southern Mo.: Ste. Genevieve, Madison, Iron, Wayne, Reynolds, Carter, Shannon, Howell, Douglas, Taney, Stone, Barry, Newton, and McDonald counties.

**Amphicarpa bracteata** (L.) Fernald, Rh. 35: 276. 1933. Hog Peanut.

*Amphicarpa monoica* (L.) Ell. (G).

*Falcata comosa* (L.) Ktze. (B & B).

Open woods and thickets. Circumneutral to oxylophile. General.

**Amphicarpa comosa** (L.) G. Don. See Rh. 35: 276. 1933.

*Amphicarpa Pitcheri* T. & G. (G).

*Falcata Pitcheri* (T. & G.) Ktze. (B & B).

Moist rich woods and thickets. Circumneutral. General but scattered: Marion, Ralls, Pike, St. Louis, Jefferson, Iron, Reynolds, Shannon, Phelps, Cole, Boone, Randolph, Grundy, Clinton, Platte, Jackson, Cass, Greene, Taney, and Jasper counties.

**Galactia regularis** (L.) BSP. Milk Pea.

Thickets and open woods along streams. Circumneutral to oxylophile. Southern Mo.: Dunklin, Butler, Shannon, and Barry counties.

**Galactia volubilis** (L.) Britton var. **mississippiensis** Vail.

Rocky woods, slopes, and glades. Oxylophile. Eastern and southern Mo., mostly in the Ozark region: Knox, St. Charles, Jefferson, Ste. Genevieve, Perry, Dunklin, Butler, Scott, Bollinger, Ripley, Oregon, Wayne, Shannon, Reynolds, Dent, Phelps, Pulaski, Texas, Howell, Douglas, Taney, Barry, Dallas, Jasper, and McDonald counties.

**Rhynchosia tomentosa** (L.) H. & A.

*Dolicholus tomentosus* (L.) Vail (B & B).

Sandy open ground. Oxylophile. Southeastern Mo.: Dunklin Co.

**Rhynchosia latifolia** Nutt.*Dolicholus latifolius* (Nutt.) Vail (B & B).

Sandy prairies, thickets, and rocky open woods along streams. Oxylophile.  
 Southern Mo.: Mississippi, Stoddard, Dunklin, Ripley, Ozark, and McDonald counties.

## Fam. OXALIDACEAE

**Oxalis violacea** L. Sheep Sour, Wood Sorrel.

Rocky open woods, glades, and rocky prairies. Circumneutral. General.

**Oxalis florida** Salisb. var. *strigosifolia* Wiegand, Rh. 27: 134. 1925.*Oxalis filipes* Small, in part (G).

Open woods and thickets. Oxylophile. Southeastern Mo., local: Ripley Co.

**Oxalis europaea** Jord. See Rh. 27: 134. 1925. Lady's Sorrel.*Oxalis corniculata* of Am. auth., not L. (G).*Xanthoxalis corniculata* (L.) Small (B & B).

Open woods, thickets, fields, and waste ground. Circumneutral. General and common.

**Oxalis europaea** f. *pilosella* Wiegand, Rh. 27: 135. 1925.

Similar situations to the last. Oxylophile. Scattered: St. Louis, Boone, and Jackson counties.

**Oxalis europaea** f. *villicaulis* Wiegand, Rh. 27: 135. 1925.

Frequently occurring with the other forms. St. Louis, Jefferson, and Douglas counties.

**Oxalis europaea** f. *cymosa* (Small) Wiegand, Rh. 27: 135. 1925.*Oxalis cymosa* Small.*Xanthoxalis cymosa* Small (B & B).

Rocky open woods, fields, and waste ground. Circumneutral. General.

**Oxalis europaea** var. *Bushii* (Small) Wiegand, Rh. 27: 135. 1925.*Oxalis Bushii* Small.*Xanthoxalis Bushii* Small (B & B).*Oxalis interior* (Small) Fedde.*Xanthoxalis interior* Small (B & B).

Open woods and rocky waste ground. Circumneutral. Southern and central Mo.: Jefferson, Boone, Jackson, Johnson, Newton, and Jasper counties.

**Oxalis europaea** var. *Bushii* f. *subglabrata* Wiegand, Rh. 27: 136. 1925.

Occasionally found with the typical and other forms. Jackson Co.

**Oxalis stricta** L. Sheep Sorrel, Yellow Wood Sorrel.

Rocky open woods, prairies, fields, and glades. Circumneutral. General.

**Oxalis stricta** var. *pletocarpa* Wiegand, Rh. 27: 123. 1925.

Prairies, open thickets, and glades. Circumneutral. General.

**Oxalis corniculata** L. See Rh. 27: 120. 1925.*Oxalis repens* Thunb. (G).*Xanthoxalis corniculata* (L.) Small, in part (B & B).

Fields and waste ground, and frequently about greenhouses and gardens. Indifferent. Scattered: St. Louis, Jefferson, St. Francois, Boone, Jackson, and Jasper counties.

*Oxalis corniculata* var. *viscidula* Wiegand, Rh. 27: 121. 1925.

Commonly occurring with the typical form. Oxylophile. St. Louis and Jackson counties.

*Oxalis pilosa* Nutt. var. *Wrightii* (Gray) Wiegand, Rh. 23: 67. 1926.

Open and waste ground. Oxylophile. Introduced in Jackson Co.

#### Fam. GERANIACEAE

*Geranium maculatum* L. Wild Geranium, Cranesbill.

Rich or rocky open woods, and thickets. Circumneutral. General.

*Geranium carolinianum* L.

Meadows, prairies, glades, and waste ground. Circumneutral to oxylophile. General.

*Geranium carolinianum* var. *confertiflorum* Fernald, Rh. 37: 300. 1935.

Similar situations to the preceding. Oxylophile. General.

*Geranium pusillum* Burm. f.

Rocky open ground. Circumneutral. Southwestern Mo., local: McDonald Co.

*ERODIUM CICUTARIUM* (L.) L'Her. Pink Needle, Storksbill.

Open and waste ground. Circumneutral. Introduced in Boone and Platte counties.

#### Fam. LINACEAE

*Linum medium* (Planch.) Britton.

Prairies, rocky woods, and glades. Circumneutral. Central and southern Mo.: Boone, Callaway, St. Louis, Jefferson, Franklin, Washington, Ste. Genevieve, St. Francois, Madison, Iron, Reynolds, Ripley, Oregon, Shannon, Dent, Phelps, Camden, Wright, Polk, Hickory, Cedar, St. Clair, Greene, Ozark, Taney, Barry, Vernon, Barton, Jasper, Newton, and McDonald counties.

*Linum rigidum* Pursh.

Rocky and waste ground. Circumneutral. Introduced in Jackson Co.

*Linum sulcatum* Riddell.

Rocky prairies, glades, and open woods. Circumneutral. General.

*Linum striatum* Walt.

Moist woods, bogs, and wet sandy open ground. Oxylophile to circumneutral. Eastern Mo., south of the Missouri River; Franklin, Jefferson, Ste. Genevieve, Perry, Iron, Bollinger, Scott, Dunklin, Butler, and Ripley counties.

*LINUM USITATISSIMUM* L. Flax, Linseed.

Cultivated and frequently adventive along railroads and roadsides. Indifferent. Scattered: Boone, Warren, St. Louis, Franklin, Saline, Clay, Jackson, Greene, Barton, and Jasper counties.

#### Fam. ZYGOPHYLLACEAE

*TRIBULUS TERRESTRIS* L. Caltrop.

Waste ground. Indifferent. Scattered: St. Louis, Franklin, Boone, Montau, Atchison, Andrew, and Jackson counties.

***Kallstroemia intermedia* Rydb.***Kallstroemia maxima* (L.) T. & G. (G).

Waste ground. Oxylophile. Scattered: Jefferson, Jackson, and Jasper counties.

**Fam. RUTACEAE*****Zanthoxylum americanum* Mill. Prickly Ash.**

Thickets and open rocky woods. Circumneutral to calciphile. General, although apparently absent from parts of the Ozark region.

***Ruta graveolens* L. Rue.**

Planted in old gardens and occasionally escaped into waste ground. Indifferent. Franklin Co.

***Ptelea trifoliata* L. Hop Tree, Wafer Ash.**

Rocky thickets and glades. Circumneutral to oxylophile. Eastern, central, and southern Mo., and locally in Atchison Co., in the northwestern part. Commonest in the Ozark region.

**Fam. SIMARUBACEAE*****Ailanthus altissima* (Mill.) Swingle, Jour. Wash. Acad. Sci. 6: 495. 1916. Tree of Heaven.***Ailanthus glandulosa* Desf. (G), (B & B).

A Chinese tree commonly planted and escaping in many places. Thickets and along streams. Scattered: St. Louis, Ripley, Jackson, Greene, and Jasper counties.

**Fam. POLYGALACEAE*****Polygala senega* L. Seneca Snakeroot.**

Rocky open woods, thickets, and clearings. Oxylophile to circumneutral. Scattered: Schuyler, Sullivan, Dent, and Ozark counties.

***Polygala senega* var. *latifolia* T. & G.**

In similar situations to the typical form and more common. Oxylophile to circumneutral. Southern Mo.: Iron, Reynolds, Carter, Ripley, Oregon, Shannon, Dent, Phelps, Wright, Webster, Douglas, Ozark, Taney, Dallas, Hickory, Polk, Greene, Stone, Barry, and McDonald counties.

***Polygala incarnata* L. Pink Milkwort.**

Prairies and glades. Circumneutral to oxylophile. Southern and western Mo.: Dent, Texas, Greene, Clinton, Jackson, Cass, Henry, Vernon, Jasper, Newton, and McDonald counties.

***Polygala sanguinea* L. Field Milkwort.**

Prairies, glades, and meadows. Circumneutral. General.

***Polygala verticillata* L.**

Open woods, thickets, and glades. Circumneutral to oxylophile. General: Sullivan, Clark, Boone, St. Charles, St. Louis, Jefferson, Washington, Crawford, Wayne, Reynolds, Shannon, Dent, Wright, Greene, Stone, Polk, Morgan, Saline, Atchison, Holt, Jackson, Jasper, Newton, and McDonald counties.

*Polygala verticillata* var. *ambigua* (Nutt.) Wood.

Rocky woods and glades. Oxylophile. Southern Mo.: Washington, Iron, Dent, Shannon, Texas, Howell, Greene, Stone, Barry, and McDonald counties.

*Polygala verticillata* var. *sphenostachya* Pennell, *Bartonia* 13: 12. 1932.

Limestone glades. Calciphile. Local: Jackson Co.

## Fam. EUPHORBIACEAE

*Croton glandulosus* L. var. *septentrionalis* Muell. Arg.

Prairies, open woods, cultivated and waste ground. Oxylophile to circumneutral. General but commonest in central and southern Mo.

*Croton capitatus* Michx. Hogwort.

Prairies, glades, and waste ground. Circumneutral to oxylophile. General and common.

*Croton monanthogynus* Michx.

Dry prairies, barrens, glades, and waste ground. Circumneutral to oxylophile. General, except perhaps in parts of northern Mo.

*Croton Engelmanni* Ferg.

Open ground. Circumneutral to oxylophile. Southern Mo.: Scott, Mississippi, New Madrid, Pemiscot, Stoddard, Butler, Ripley, and Howell counties, and also adventized along railways in St. Louis and Moniteau counties.

*Croton texensis* (Klotzsch) Muell. Arg.

Introduced along railroads. Oxylophile. Jackson Co.

*Crotonopsis elliptica* Willd. See Bull. Torr. Bot. Club 45: 478-479. 1919.

*Crotonopsis linearis* of auth. in part, not Michx. (G), (B & B).

Rocky open woods and glades. Oxylophile. East-central and southern Mo.: Lincoln, Montgomery, Warren, St. Charles, Gasconade, Franklin, St. Louis, Jefferson, St. Francois, Ste. Genevieve, Perry, Bollinger, Madison, Iron, Wayne, Shannon, Dent, Phelps, Crawford, Pulaski, Texas, Greene, Polk, St. Clair, Barry, Vernon, Jasper, Newton, and McDonald counties.

*Crotonopsis linearis* Michx.

Open sandy ground. Oxylophile. Southeastern Mo.: Stoddard and Dunklin counties.

*MERCURIALIS ANNUA* L. Mercury.

Introduced in waste ground. St. Louis Co.

*Acalypha virginica* L. Three-seeded Mercury.

Prairies, thickets, open woods, and cultivated and waste ground; usually in moist or wet ground. Circumneutral. General.

*Acalypha digynae* Raf. See Rh. 29: 198. 1927.

In similar situations to the preceding. Circumneutral. Eastern, central, and southern Mo.: Marion, St. Charles, St. Louis, Jefferson, St. Francois, Perry, Butler, Dent, Phelps, Pulaski, Cole, Dallas, Montgomery, Boone, Randolph, Saline, Linn, Clinton, Jackson, Barton, and Jasper counties.

*Acalypha gracilens* Gray var. *monococca* Engelm. See Rh. 29: 203. 1927.

*Acalypha gracilens* of auth. in part, not Gray (G), (B & B).

Rocky prairies, open woods, and glades. Circumneutral. Eastern, central, and southern Mo., commonest in the Ozark region.



***Acalypha ostryaefolia* Riddell.**

Moist open and cultivated ground. Circumneutral. East-central and southern Mo.: Gasconade, St. Louis, Jefferson, Perry, Mississippi, Reynolds, Howell, Ozark, Barry, and Jasper counties.

***Ricinus communis* L. Castor-oil Plant.**

Cultivated and sometimes adventive in waste ground. Indifferent. Scattered: Lincoln, St. Louis, Dunklin, Boone, Jackson, and Jasper counties.

***Tragia urticaefolia* Michx.**

*Tragia aspettaefolia* of auth., not Torr. (B & B), in part.

*Tragia ramosa* of auth., not Torr. (B & B), in part.

Rocky prairies, open ground, and glades. Circumneutral. Central and southern Mo., mostly in the Ozark region.

***Tragia cordata* Michx.**

*Tragia macrocarpa* Willd. (G), (B & B).

Rocky open woods, thickets, and glades. Oxylophile to circumneutral. Southern Mo.: Oregon, Stone, Taney, Greene, Barry, and McDonald counties.

***Phyllanthus carolinensis* Walt.**

Fields, thickets, and moist alluvial open ground. Circumneutral. Central and southern Mo.: Boone, St. Louis, Franklin, St. Francois, Scott, New Madrid, Dunklin, Ripley, Oregon, Shannon, Phelps, Barry, Vernon, Jasper, Newton, and McDonald counties.

***Andrachne phyllanthoides* (Nutt.) Muell. Arg.**

Rocky ledges, glades, and bald knobs. Calciphile to circumneutral. Southern Mo.: Phelps, Shannon, Texas, Ozark, Christian, Taney, Stone, and Barry counties.

***Euphorbia zygophylloides* Boiss. Prairie Spurge.**

Glades and rocky open ground. Calciphile to circumneutral. Western Mo., scattered: Jackson, Cass, Henry, Barry, and Greene counties.

***Euphorbia serpens* HBK.**

Open ground, usually in rich alluvial soil. Calciphile to circumneutral. Northern and central Mo., scattered: St. Charles, St. Louis, Perry, Miller, Salline, Atchison, Andrew, Platte, Carroll, Jackson, and Henry counties.

***Euphorbia glyptosperma* Engelm.**

Plains, sand bars, and open alluvial ground. Circumneutral. Northwestern and central Mo., scattered: St. Louis, Jefferson, Atchison, Holt, Buchanan, Platte, Clay, and Jackson counties.

***Euphorbia nutans* Lag. Nodding Spurge.**

*Euphorbia Preslii* Guss. (G).

Thickets, fields, and waste ground. Circumneutral. General and common.

***Euphorbia maculata* L. Milk Purslane.**

Cultivated and waste ground, and in glades. Indifferent. General and common.

***Euphorbia humistrata* Engelm.**

Rocky open ground. Oxylophile. Eastern, central, and southern Mo., scattered: Marion, Lincoln, Boone, Cooper, Cole, Laclede, St. Louis, Jefferson, Franklin, Perry, Pemiscot, New Madrid, Barry, and Jackson counties.

***Euphorbia marginata* Pursh.** Snow-on-the-mountain.

Native on loess hills and plains in northwestern Mo. and introduced in other parts of the state: Atchison, Holt, Jackson, Lafayette, Boone, Greene, Stone, Barton, and Jasper counties.

***Euphorbia corollata* L.** Flowering Spurge.

Prairies, glades, and open rocky woods. Circumneutral. General.

***Euphorbia dentata* Michx.**

Prairies, glades, and waste ground. Circumneutral. General.

***Euphorbia heterophylla* L.** Painted-leaf.

Open rocky woods, thickets, glades, and alluvial soils. Circumneutral. General.

***Euphorbia obtusata* Pursh.** Warty Spurge.

Moist woods and thickets. Circumneutral. East-central and southeastern Mo., mostly in the eastern Ozark region: Boone, St. Louis, Jefferson, Franklin, St. Francois, Washington, and Shannon counties.

***Euphorbia dictyosperma* Fisch. & Mey.**

*Tithymalus missouriensis* (Norton) Small (B & B), in part.

*Tithymalus arkansanus* (Engelm. & Gray) Kl. & Gareke (B & B), in part.

*Galarrhoecus missouriensis* (Norton) Rydb. (S), (R).

*Galarrhoecus arkansanus* (Engelm. & Gray) Small (S), (R).

Rocky ledges, glades, and open ground. Calciphile to circumneutral. Scattered in western and middle Mo.: Boone, Clay, Jackson, St. Clair, Barry, Jasper, and McDonald counties.

***Euphorbia commutata* Engelm.**

Rich rocky woods, and moist open ground. Circumneutral. East-central and southern Mo.: Montgomery, Warren, St. Louis, Jefferson, Franklin, Ste. Genevieve, St. Francois, Bollinger, Washington, Crawford, Iron, Reynolds, Wayne, Carter, Ripley, Oregon, Shannon, Texas, Dent, Phelps, Maries, Pulaski, Howell, Laclede, Wright, Douglas, Taney, Stone, Barry, and McDonald counties.

***EUPHORBIA CYPARISSIAS* L.** Cypress Spurge.

Commonly planted in cemeteries and sometimes escaping to roadsides and fields. Indifferent. Scattered: Marion, St. Louis, Boone, and Jackson counties.

**Fam. CALLITRICHACEAE*****Callitriche deflexa* A. Br. var. *Austini* (Engelm.) Hagelm.**

Wet or damp open ground, around borders of ponds and swales, fields and waste places, mostly on alluvial soils. Circumneutral to oxylophile. Central and southern Mo.: Boone, Lincoln, St. Louis, Jefferson, Franklin, Ste. Genevieve, Dunklin, Shannon, Phelps, Maries, Texas, Webster, Laclede, Douglas, Greene, Jackson, Henry, Dade, Lawrence, Barton, and Jasper counties.

***Callitriche heterophylla* Pursh.** Water Starwort.

Ponds, bayous, shallow water of slow streams, and in springs and spring branches. Circumneutral. General but scattered: Livingston, Clark, Randolph, Boone, Callaway, St. Louis, Jefferson, Perry, Wayne, Butler, Ripley, Dunklin, Reynolds, Shannon, Iron, Oregon, Howell, Texas, Dent, Crawford,

Pulaski, Dallas, Laclede, Greene, Ozark, Barry, Wright, Webster, Jackson, Barton, and Jasper counties.

### Fam. ANACARDIACEAE

*Rhus glabra* L. Smooth Sumach.

Upland prairies, thickets, and borders of woods. Circumneutral. General and probably in every county.

*Rhus copallina* L.

Prairies, thickets, and open woods. Circumneutral to oxylophile. General, but commonest in southern Mo.

*Rhus Toxicodendron* L. Poison Ivy.

Thickets and open woods; commonest on alluvial soil and along streams. Circumneutral. General and probably in every county. Very variable in foliage and habit, but the shrubby and scandent forms are not clearly distinguishable.

*Rhus quercifolia* (Michx.) Steud. Poison Oak.

Rocky open woods and glades. Oxylophile. Southern Mo., rare and scattered: Mississippi and Ozark counties.

*Rhus canadensis* L. Pole-cat Bush, Fragrant Sumach.

Thickets, glades, and open woods. Circumneutral to calciphile. General.

*Rhus canadensis* var. *serotina* (Greene) Palmer & Steyermark, comb. nov. Pole-cat Bush.

*Schmalzia serotina* Greene.

*Rhus canadensis* var. *trilobata* of auth., not *Rhus trilobata* Nutt. (G).

Thickets, glades, and rocky bluffs. Circumneutral to calciphile. General, but commonest in the Ozark region: Mercer, Putnam, Knox, Shelby, Ralls, Audrain, Boone, St. Francois, Wayne, Butler, Shannon, Texas, Phelps, Pulaski, Laclede, Maries, Cole, Moniteau, Morgan, Miller, Camden, Douglas, Ozark, Taney, Hickory, Polk, Greene, Stone, Jackson, Henry, St. Clair, Cedar, Barry, Jasper, Newton, and McDonald counties.

A stout, much-branched shrub, blooming much later than *R. canadensis*, and after the leaves are half grown. It differs from *Rhus trilobata* Nutt. in its larger, thinner, more obtusely lobed leaflets and larger fruit clusters, as well as in habit of growth.

*Rhus canadensis* var. *illinoensis* (Greene) Fernald.

Rocky bluffs and glades. Calciphile to circumneutral. Scattered: Putnam and Barry counties.

*Cotinus americanus* Nutt. Smoke Tree.

*Rhus cotinoides* Nutt. (G).

Rocky bluffs, glades, and bald knobs. Calciphile to circumneutral. Southwestern Mo.: Polk, Ozark, Taney, and Stone counties.

### Fam. AQUIFOLIACEAE

*Ilex decidua* Walt. Possum Haw.

Low woods and glades. Calciphile to circumneutral. Eastern, central, and southern Mo.: Lewis, Ralls, Pike, Lincoln, Montgomery, St. Charles, St. Louis,

Jefferson, Franklin, Gasconade, Perry, Cape Girardeau, Bollinger, Scott, Mississippi, New Madrid, Pemiscot, Dunklin, Stoddard, Butler, Wayne, Madison, Iron, Ripley, Oregon, Carter, Shannon, Cole, Miller, Howell, Ozark, Taney, Stone, Barry, St. Clair, Bates, and Jasper counties.

*Ilex verticillata* (L.) Gray var. *padifolia* (Willd.) T. & G. Black Alder, Winterberry.

Sandy bogs and along rocky streams. Oxylophile. Southeastern Mo.: Iron, Madison, and Reynolds counties.

*Ilex opaca* Ait. Christmas Holly.

Low wet woods and sandy bogs. Oxylophile. Southeastern Mo.: Cape Girardeau, Mississippi, New Madrid, Dunklin, Stoddard, Butler, and Wayne counties.

#### FAM. CELASTRACEAE

*Evonymus atropurpureus* Jacq. Burning Bush, Wahoo.

Thickets, banks of streams, and open woods. Circumneutral. General.

*Evonymus americanus* L. Strawberry Bush.

Low woods and moist banks of small streams. Oxylophile to circumneutral. Southeastern Mo.: Dunklin, Butler, and Ripley counties.

*Evonymus obovatus* Nutt. Running Strawberry Bush.

Shaded rocky bluffs. Circumneutral to calciphile. Southern Mo.: Madison, Shannon, Texas, Howell, and Stone counties.

*Celastrus scandens* L. Bitter-sweet.

Thickets and fence rows. Circumneutral. General.

#### FAM. STAPHYLEACEAE

*Staphylea trifolia* L. Bladder-nut, Rattle-box.

Rich woods, thickets, and along bluffs. Circumneutral. General.

#### FAM. ACERACEAE

*Acer saccharum* Marsh. Sugar Maple.

Bluffs and woods along streams. Circumneutral. General, but less common in Missouri than the following variety: Daviess, Sullivan, Adair, Saline, Calhoun, St. Louis, Washington, Ste. Genevieve, Iron, Scott, Butler, Ozark, Gentry, Clay, Jackson, Benton, Cedar, Greene, Barry, and McDonald counties.

*Acer saccharum* f. *Eugelii* (Pax) Palmer & Steyermark, comb. nov.

*Acer Eugelii* Pax.

*Acer saccharum* var. *Eugelii* (Pax) Rehder.

Occasionally found with the typical form. Circumneutral. Eastern and southern Mo., scattered: St. Louis, Washington, St. Francois, Madison, Iron, Shannon, Wayne, Butler, Texas, and McDonald counties. A leaf form sometimes looking distinct, but inconstant.

*Acer saccharum* var. *glaucum* (Pax) Sarg. Bot. Gaz. 87: 233. 1919.

In similar situations to the typical form and more common, especially in the Ozark region. Eastern, central, and southern Mo.

*Acer saccharum* var. *Schneckii* Rehder in Sarg. Trees & Shrubs 2: 356. 1913.

Alluvial woods. Circumneutral. Southeastern Mo. and locally in central Mo.: Perry, Cape Girardeau, Bollinger, Madison, Iron, Scott, Mississippi, Stoddard, Dunklin, Wayne, and Benton counties.

*Acer floridanum* (Chapm.) Pax.

Low woods. Circumneutral to oxylophile. Southeastern Mo.: Wayne and Dunklin counties.

*Acer nigrum* Marsh. Black Maple.

Upland woods and along small streams. Circumneutral. Northern and central Mo., and occasionally in the southern part of state: Mercer, Grundy, Putnam, Schuyler, Adair, Clark, Knox, Marion, Shelby, Monroe, Randolph, Howard, Boone, Cooper, Moniteau, Montgomery, Warren, St. Louis, Washington, Butler, Taney, Holt, Andrew, Clay, Jackson, and Lafayette counties.

*Acer nigrum* var. *Palmeri* Sarg. Jour. Arnold Arb. 2: 166. 1921.

Occasionally found with the typical form: Clark, Lewis, Grundy, and Jackson counties.

*Acer saccharinum* L. Silver Maple, Soft Maple.

Low wet woods and alluvial banks of streams. Circumneutral. General and probably in every county.

*Acer rubrum* L. Red Maple.

Low wet woods, and rocky hillsides and bluffs in the Ozark region. Circumneutral. Central and southern Mo., south and east of a line from St. Louis, Warren, Boone, and Morgan counties to McDonald Co.

*Acer rubrum* var. *Drummondii* (Hook. & Arn.) T. & G.

Low wet woods and swamps. Circumneutral. Southeastern Mo.: Perry, Cape Girardeau, Scott, Mississippi, New Madrid, Stoddard, Dunklin, Butler, and Ripley counties.

*Acer rubrum* var. *Drummondii* f. *rotundata* Sarg. Bot. Gaz. 67: 237. 1919.

Rarely found with the preceding form. Southeastern Mo., local: Dunklin and Ripley counties.

*Acer rubrum* var. *tridens* Wood.

Sometimes found with the typical form. Circumneutral to oxylophile. Eastern Mo., south of the Missouri River: St. Louis, Jefferson, Franklin, Iron, Stoddard, and Dunklin counties.

*Acer Negundo* L. Box Elder.

Low alluvial woods. Circumneutral. General.

*Acer Negundo* var. *texanum* Pax.

Woods along streams, and along rocky bluffs. Circumneutral. Southwestern Mo.: Lawrence, Jasper, and McDonald counties.

*Acer Negundo* var. *interior* (Britton) Sarg. Bot. Gaz. 67: 239. 1919.

Woods along streams. Circumneutral. Northwestern Mo.: Grundy, Platte, Clay, and Jackson counties.

*Acer Negundo* var. *violaceum* Kirch.

Alluvial ground along streams. Circumneutral. Northern Mo.: Scotland, Schuyler, Adair, Putnam, Sullivan, Linn, Mercer, Grundy, Livingston, Harrison,

Davies, Worth, Gentry, Dekalb, Clinton, Lafayette, Nodaway, Atchison, and Buchanan counties.

### Fam. SAPINDACEAE

*Sapindus Drummondii* Hook. & Arn. Soapberry, Wild China Tree.

Glades, and along the base of bluffs with south or west exposures. Calciphile to circumneutral. Southwestern Mo.: Taney, Stone, Barry, Jasper, Newton, and McDonald counties.

*CARDIOSPERMUM HALICACABUM* L. Balloon Vine.

Infrequently escaped from gardens to roadsides and waste ground. St. Louis Co.

### Fam. HIPPOCASTANACEAE

*Aesculus glabra* Willd. Ohio Buckeye.

Low alluvial woods along streams. Circumneutral. Scattered: Putnam, Marion, Pike, Jackson, Barry, and McDonald counties. The typical form of the species is quite rare in Mo.

*Aesculus glabra* var. *Sargentii* Rehder, Jour. Arnold Arb. 7: 241. 1926.

*Aesculus glabra* var. *arguta* Robinson, in part (G).

*Aesculus glabra* var. *Buckleyi* Sarg., in part.

Thickets and glades. Circumneutral. General but scattered: Lewis, Marion, Pike, Washington, Perry, Bollinger, St. Clair, Jackson, Cass, Vernon, and Jasper counties. Previously confused with *Aesculus arguta* Buckley, a southwestern species which does not occur in Mo.

*Aesculus glabra* var. *leucodermis* Sarg. Trees & Shrubs 2: 262. 1913.

Rocky woods and along small rocky streams. Circumneutral. Southern and east-central Mo.: St. Louis, Maries, Dallas, Webster, Douglas, Ozark, and Taney counties.

*Aesculus glabra* var. *pallida* (Willd.) Kirchner. See Jour. Arnold Arb. 2: 118. 1920.

Open woods, thickets, and low or rocky ground along streams. Circumneutral. General. This is the common variety of buckeye found in the state.

*Aesculus discolor* Pursh. Red-flowered Buckeye.

*Aesculus Pavia* of auth., not L. (G), in part (B & B).

Low open woods. Circumneutral. Southeastern Mo.: Cape Girardeau and Dunklin counties.

*Aesculus discolor* var. *mollis* Sarg. Trees & Shrubs 2: 267. 1913.

*Aesculus austrina* Small (B & B).

Low open woods and thickets along streams. Southeastern Mo., in the lowlands and locally north to Phelps Co.: Madison, Bollinger, Cape Girardeau, Scott, Stoddard, Dunklin, Butler, Wayne, Ripley, Carter, Oregon, and Phelps counties.

### Fam. BALSAMINACEAE

*Impatiens pallida* Nutt. Pale-flowered Touch-me-not.

Low wet woods, bogs, and springy banks. Circumneutral. General.



*Impatiens biflora* Walt. Spotted-flowered Touch-me-not.  
Similar situations to the last. Circumneutral. General.

*IMPATIENS BALSAMINA* L.

Cultivated and sometimes escaped. Dunklin Co.

Fam. RHAMNACEAE

*Berchemia scandens* (Hill) Trelease. Supple-Jack.

Low swampy woods, and ledges and slopes of bald knobs and bluffs with seepage water. Calciphile to circumneutral. Southern Mo.: Mississippi, New Madrid, Pemisicot, Dunklin, Stoddard, Butler, Ripley, Dent, Shannon, Oregon, Texas, Howell, Douglas, Ozark, Taney, Stone, and Barry counties.

*Rhamnus lanceolata* Pursh.

Glades and thickets. Calciphile. General except in the southeastern lowlands where it is apparently absent.

*Rhamnus caroliniana* Walt. Indian Cherry.

Rocky open woods, thickets, and glades. Calciphile to circumneutral. Central and southern Mo.: Boone, Moniteau, St. Charles, Osage, Maries, Phelps, Gasconade, Crawford, Franklin, St. Louis, Jefferson, St. Francois, Bollinger, Madison, Iron, Reynolds, Wayne, Dunklin, Ripley, Carter, Oregon, Dent, Shannon, Texas, Howell, Wright, Douglas, Ozark, Taney, Stone, Barry, and Jasper counties.

*Rhamnus caroliniana* var. *mollis* Fernald, Rh. 12: 79. 1910.

In similar situations to the preceding. East-central and southern Mo.: St. Charles, St. Louis, Jefferson, Franklin, St. Francois, Bollinger, Iron, Wayne, Reynolds, Carter, Ripley, Oregon, Shannon, Crawford, Gasconade, Ozark, Miller, and Hickory counties.

*RHAMNUS CATHARTICA* L. Buckthorn.

Thickets and waste ground. Introduced in Marion and Boone counties.

*Ceanothus americanus* L. New Jersey Tea.

Rocky open woods, thickets, and glades. Circumneutral. General but commonest in southern Mo.

*Ceanothus ovatus* Desf. Red-root.

Rocky woods and glades. Circumneutral to oxylophile. Scattered: Iron, Jackson, St. Clair, Jasper, Newton, and McDonald counties.

*Ceanothus ovatus* var. *pubescens* T. & G.

Rocky prairies, plains, and loess hills. Calciphile to circumneutral. General.

Fam. VITACEAE

*Parthenocissus quinquefolia* (L.) Planch. Virginia Creeper.

*Pseuderia quinquefolia* (L.) Greene (G).

Open woods, thickets, fence rows, and along rocky bluffs. Circumneutral. General and probably in every county.

*Parthenocissus quinquefolia* var. *hirsuta* (Donn) Planch.

*Pseuderia quinquefolia* var. *hirsuta* (Donn) Rehder (G).

Rocky open woods, thickets, and glades. Circumneutral. General but scat-

- tered: Adair, Monroe, Ralls, Boone, Iron, Scott, Ripley, Dallas, Pulaaki, Atchison, Gentry, Jackson, Johnson, Jasper, and Newton counties.
- Parthenocissus quinquefolia** var. *Saint-Paulii* (Koehe & Graebn.) Rehder.  
*Psedera quinquefolia* var. *Saint-Paulii* (Koehe & Graebn.) Rehder (G).  
 Rocky open woods, thickets, and bluffs. Circumneutral. Southern and western Mo.: Mississippi, Ripley, Pulaski, Stone, Jackson, Cedar, Jasper, Newton, and McDonald counties.
- Parthenocissus vitacea** (Knerr) Hitchc.  
*Psedera vitacea* (Knerr) Greene (G).  
 Thickets, open woods, and along bluffs and fence rows. Circumneutral. General but scattered: Clark, Atchison, Holt, Jackson, Cooper, Christian, Stone, Jasper, and Newton counties.
- Ampelopsis cordata** Michx. Raccoon Grape, False Grape.  
*Cissus Ampelopsis* Pers. (G).  
 Open woods, thickets, and fence rows. Circumneutral. General.
- Ampelopsis arborea** (L.) Rusby. Pepper-vine.  
*Cissus arborea* (L.) Des Moulins (G).  
 Low open woods and thickets. Circumneutral. Eastern Mo., south of the Missouri River: St. Louis, Jefferson, St. Francois, Perry, Cape Girardeau, Mississippi, New Madrid, Pemiscot, Dunklin, and Butler counties.
- Cissus incisa** (Nutt.) Des Moulins.  
 Rocky ledges of bluffs with south or west exposure. Calciphile. Southwestern Mo.: Taney and McDonald counties.
- Vitis labrusca** L. Northern Fox Grape.  
 Cultivated and occasionally escaped into thickets and waste ground. Scattered: St. Louis and Jasper counties.
- Vitis aestivalis** Michx. Summer Grape.  
 Upland woods and thickets. Circumneutral to oxylophile. General.
- Vitis Lincecumii** Buckley var. *glauca* Munson. See Bailey, Gent. Herb. 3: 193. 1934. Post Oak Grape.  
 Rocky upland woods, glades, and thickets. Circumneutral to oxylophile. Central and southern Mo., mostly in the Ozark region: Boone, St. Louis, Scott, Stoddard, Dunklin, Wayne, Iron, Reynolds, Shannon, Howell, Texas, Phelps, Maries, Laclede, Dallas, Douglas, Taney, Stone, Barry, Polk, Hickory, Jackson, Cedar, Barry, Vernon, Jasper, Newton, and McDonald counties. This has sometimes been confused with *Vitis Leconteana*, or *V. bicolor* as it was formerly called.
- Vitis cinerea** Engelm. Winter Grape, Bird Grape.  
 Low alluvial woods, thickets, and fence rows. Circumneutral. General and common.
- Vitis cinerea** var. *canescens* (Engelm.) Bailey.  
 Occasionally found with the typical form. Scattered: St. Louis, Boone, and Jasper counties.
- Vitis cordifolia** Michx. Frost Grape.  
 Alluvial woods and thickets along streams. Circumneutral. General and common.

***Vitis cordifolia* var. *foetida* Engelm.**

Growing with the typical form. Local: St. Louis Co.

***Vitis vulpina* L. River-bank Grape.**

Alluvial woods, thickets, and banks of streams. Circumneutral. Northern and central Mo., and locally south to Madison Co.: Pike, St. Charles, St. Louis, Madison, Montgomery, Scotland, Knox, Shelby, Monroe, Audrain, Callaway, Boone, Warren, Cooper, Morgan, Pettis, Schuyler, Adair, Putnam, Sullivan, Linn, Mercer, Grundy, Livingston, Carroll, Harrison, Daviess, Caldwell, Worth, Gentry, Dekalb, Clinton, Atchison, Nodaway, Holt, Andrew, Buchanan, Platte, Jackson, Bates, and Vernon counties.

***Vitis vulpina* var. *praecox* Bailey.**

In similar situations to the typical form. Circumneutral. Central Mo.: St. Louis, St. Charles, Boone, Carroll, Clay, and Jackson counties.

***Vitis palmata* Vahl. Red Grape.**

Low wet woods and borders of swamps and bayous. Circumneutral. East-central and southeastern Mo.: St. Charles, St. Louis, Jefferson, Bollinger, New Madrid, Pemiscot, Dunklin, and Butler counties.

***Vitis rupestris* Scheele. Sand Grape.**

Rocky banks and beds of streams. Circumneutral to oxylophile. Central and southern Mo.: Montgomery, Franklin, Jefferson, Washington, Madison, Iron, Reynolds, Carter, Oregon, Shannon, Howell, Texas, Phelps, Pulaski, Laclede, Dallas, Miller, Morgan, Stone, Barry, Jasper, Newton, and McDonald counties.

***Vitis rupestris* var. *dissecta* Eggert.**

Rocky ground along streams. Oxylophile. Eastern Mo., south of the Missouri River: St. Louis, Jefferson, and Carter counties.

***Vitis rotundifolia* Michx. Muscadine.**

Low open woods and borders of swamps and bayous. Oxylophile. Southeastern Mo.: Madison, Pemiscot, and Dunklin counties.

### Fam. TILIACEAE

***Tilia glabra* Vent. See Bot. Gaz. 66: 424. 1918. Linn, Linden.**

*Tilia americana* of auth., and perhaps L., in part (G), (B & B).

Woods and bluffs along streams. Circumneutral. General, but apparently absent from some of the southern and western counties.

***Tilia floridana* Ashe.**

Bluffs and rocky woods along streams. Circumneutral. Southern Mo. and along the larger streams to the northern boundary: Clark, Balls, St. Louis, Ste. Genevieve, Madison, Iron, Wayne, Butler, Carter, Shannon, Douglas, Ozark, Taney, Greene, Stone, Barry, Holt, Jackson, Dade, Newton, and McDonald counties.

***Tilia floridana* var. *hypoleuca* Sarg. Bot. Gaz. 66: 436. 1918.**

Rocky woods and bluffs. Circumneutral. Southern Mo.: Ozark, Taney, Stone, and Barry counties. Sometimes looks very distinct, but intergrades with the typical form.

***Tilia heterophylla* Vent. var. *Michauxii* (Nutt.) Sarg. Bot. Gaz. 66: 506. 1918.**

*Tilia Michauxii* Nutt. (G), (B & B).

Rocky woods and bluffs. Circumneutral. Eastern Mo.: Marion, St. Francois, and Butler counties.

### Fam. MALVACEAE

**ABUTILON THEOPHRASTI** Medic. Velvet Leaf.

Cultivated fields and waste ground. Indifferent. General.

**Malvastrum angustum** Gray. Yellow False Mallow.

Rocky prairies and glades. Calciphile to circumneutral. Central, southern, and western Mo.: Montgomery, Lincoln, St. Louis, Jefferson, Franklin, Washington, Shannon, Ozark, Taney, Stone, Greene, Polk, Daviess, Jackson, Cass, Henry, St. Clair, and Jasper counties.

**Sida Elliottii** T. & G.

Sandy open ground. Oxylophile. Southeastern Mo.: Scott, Stoddard, and Dunklin counties.

**SIDA SPINOSA** L.

Cultivated and waste ground. Circumneutral. General.

**ANODA CRISTATA** Schlecht. var. **BRACHYANTHA** (Reichb.) Hochr. Ann. Conserv. & Jard. Bot. Genève 20: 47. 1916.

Introduced in waste ground. McDonald Co.

**ALTHAEA ROSEA** (L.) Cav. Hollyhock.

Cultivated in gardens and sometimes escaping to roadsides, fields, and waste ground. Boone, Saline, and Greene counties.

**MALVA ROTUNDIFOLIA** L. Common Mallow, Cheeses.

Fields, lawns, and waste ground. Indifferent. General.

**MALVA PARVIFLORA** L.

Fields and waste ground. Indifferent. Scattered: Atchison and Jackson counties.

**MALVA MOSCHATA** L. Musk Mallow.

Fields and waste ground. Indifferent. Scattered: Boone Co.

**MALVA SYLVESTRIS** L. High Mallow.

Roadsides and waste ground. Indifferent. Scattered: Warren, Jackson, Greene, and Stone counties.

**MALVA CRISPA** L. Curled Mallow.

Waste ground. Indifferent. Scattered: Osage and Jackson counties, and also reported from Greene Co.

**Callirhoe triangulata** (Leavenworth) Gray. Clustered Poppy Mallow.

Rocky open woods, prairies, and glades. Circumneutral. East-central and southeastern Mo.: St. Louis, Franklin, Scott, and Mississippi counties.

**Callirhoe involucrata** (T. & G.) Gray. Wine Cups, Purple Poppy Mallow.

Upland prairies, fields, and roadsides. Circumneutral to oxylophile. Scattered: Putnam, St. Louis, Linn, Boone, Jackson, and Taney counties.

**Callirhoe Papaver** (Cav.) Gray.

Rocky prairies and glades. Calciphile to circumneutral. Scattered: Pulaski, Pettis, Jackson, and Barry counties.

*Callirhoe Bushii* Fernald, Rh. 11: 51. 1909.

Rocky open woods and glades. Calciphile. Southwestern Mo.: Taney and Barry counties.

*Callirhoe digitata* Nutt. Fringed Poppy Mallow.

Rocky prairies, meadows, and glades. Circumneutral to oxylophile. Central and southwestern Mo.: Boone, Clay, Polk, Greene, Christian, Taney, Stone, Dade, Lawrence, Barry, Barton, Jasper, Newton, and McDonald counties. Perhaps introduced in central Mo.

*Callirhoe alcaeoides* (Michx.) Gray. Poppy Mallow.

Prairies, open woods, and waste ground. Circumneutral. Scattered: Shelby, Boone, St. Louis, Dent, Clay, Jackson, Greene, and Jasper counties.

*Hibiscus lasiocarpus* Cav.

Low open woods, and borders of sloughs, ponds, and bayous. Circumneutral. Central and southern Mo.: Platte, Lincoln, St. Charles, St. Louis, Jefferson, Franklin, Cape Girardeau, Perry, Scott, Mississippi, New Madrid, Pemiscot, Dunklin, Butler, Ripley, Wayne, Dent, Shannon, Pulaski, Oregon, Howell, Gasconade, Jasper, and Newton counties. This has sometimes been confused with *Hibiscus incanus* which is not known to occur in Mo.

*Hibiscus militaris* Cav.

Prairie sloughs, and borders of ponds and slow streams. Circumneutral. General.

*HIBISCUS TRIENUM* L. Flower-of-an-hour.

Fields, roadsides, waste and cultivated ground. Indifferent. General, but commonest in northern and central Mo.

*HIBISCUS SYRIACUS* L. Rose of Sharon, Shrubby Althea.

Commonly planted and rarely escaped to thickets and roadsides. Jasper Co.

#### Fam. HYPERICACEAE

*Ascyrum hypericoides* L. St. Andrew's Cross.

Rocky open woods. Oxylophile to circumneutral. East-central and southern Mo., mainly in the Ozark region.

*Hypericum Ascyron* L. Great St. John's wort.

Moist open woods and thickets. Oxylophile to circumneutral. Northern and central Mo., scattered: Clark, Atchison, and Jackson counties.

*HYPERICUM PERFORATUM* L. St. John's-wort.

Rocky pastures and waste ground. Circumneutral to oxylophile. General but scattered: Mercer, Clark, Shelby, Marion, Ralls, Boone, St. Louis, Jefferson, Franklin, Dunklin, Dent, Shannon, Texas, Laclede, Clay, Jackson, and Greene counties.

*Hypericum punctatum* Lam.

Moist open woods, thickets, and prairie swales. Circumneutral. General.

*Hypericum pseudomaculatum* Bush.

Rocky prairies and glades. Oxylophile to circumneutral. Southern Mo.: Phelps, Shannon, Ozark, Barry, Jasper, Newton, and McDonald counties.

***Hypericum densiflorum* Pursh.**

Sandy open ground and glades. Oxylophile. Southeastern Mo., scattered: Madison and Ripley counties.

***Hypericum prolificum* L. Shrubby St. John's-wort.**

Rocky ground along streams and bluffs. Circumneutral to oxylophile. Eastern, middle, and southern Mo., and occasional in the western counties.

***Hypericum cistifolium* Lam.**

Rocky prairies, open woods, and glades. Oxylophile to circumneutral. General.

***Hypericum mutilum* L. Dwarf St. John's-wort.**

Open woods, prairie swales, and borders of ponds and ditches. Circumneutral. Eastern, central, and southern Mo.

***Hypericum gymnanthum* Engelm. & Gray.**

Moist, sandy, open ground. Oxylophile. Southern Mo., scattered: Mississippi, Shannon, Greene, and McDonald counties.

***Hypericum gentianoides* (L.) BSP. Pine-weed.**

Sterile open ground, prairies, and glades. Oxylophile, usually on siliceous or granitic rocks. East-central and southern Mo.: Warren, Lincoln, St. Charles, Jefferson, Franklin, Washington, St. Francois, Ste. Genevieve, Perry, Madison, Iron, Dunklin, Ripley, Reynolds, Shannon, Texas, Dent, Crawford, Gasconade, Maries, Pulaski, Greene, Stone, Cedar, Dade, Barton, Jasper, and McDonald counties.

***Hypericum Drummondii* (Grev. & Hook.) T. & G.**

Fields, prairie swales, barrens, and open woods. Oxylophile. Eastern, central, and southern Mo.: Knox, Marion, Randolph, Boone, Montgomery, Lincoln, St. Charles, St. Louis, Jefferson, St. Francois, Ste. Genevieve, Perry, Madison, Iron, Wayne, Stoddard, Dunklin, Butler, Franklin, Gasconade, Crawford, Maries, Phelps, Dent, Shannon, Texas, Howell, Ozark, Polk, Greene, St. Clair, Dade, Barry, Vernon, Barton, Jasper, Newton, and McDonald counties.

***Hypericum lobocarpum* Gattinger.**

Sandy open ground. Oxylophile. Southeastern Mo.: Dunklin Co.

***Hypericum petiolatum* Walt.**

Low wet woods, swamps, bayous, and wet ledges along sandstone bluffs. Oxylophile to circumneutral. Southeastern Mo.: Ste. Genevieve, Bollinger, Mississippi, New Madrid, Dunklin, Butler, and Ripley counties.

***Hypericum virginicum* L.**

Low wet woods, swamps, and bayous. Circumneutral. Southeastern Mo.: Dunklin and Butler counties.

### FAM. ELATINACEAE

***Elatine americana* (Pursh) Arn. See Rh. 19: 12. 1917. Waterwort.**

Ditches and borders of sloughs and swales. Circumneutral. Western Mo., local: Jackson Co.

***Bergia texana* (Hook.) Seub.**

Sand bars of the Missouri River. Oxylophile to circumneutral. Western Mo., local: Jackson Co.



## Fam. TAMARICACEAE

## TAMARIX GALLICA L. Tamarisk.

Recently introduced along sand bars and banks of the Missouri and Mississippi Rivers. Oxylophile to circumneutral. Northwestern and central Mo.: St. Louis, Warren, Carroll, Jackson, and Holt counties.

## Fam. CISTACEAE

*Helianthemum Bicknellii* Fernald, Rh. 21: 36. 1919. Rock Rose.

*Helianthemum majus* Bicknell, not BSP. (G).

*Crocianthemum majus* (L.) Britton (B & B).

Rocky prairies and dry open woods. Oxylophile. General: St. Louis, Jefferson, Dent, Shannon, Crawford, Oregon, Texas, Howell, Shelby, Putnam, Sullivan, Linn, Boone, Mercer, Jackson, Greene, Barry, Jasper, and McDonald counties. This has been confused with *Helianthemum canadense* which is not known to occur in Mo.

*Lechea villosa* Ell. Pinweed.

*Lechea major* Michx., not L. (B & B).

Rocky open woods and glades. Oxylophile. Eastern, central, and southern Mo.: Knox, Shelby, Boone, Lincoln, Warren, St. Charles, St. Louis, Jefferson, Perry, Iron, Madison, Bollinger, Mississippi, Dunklin, Butler, Ripley, Oregon, Howell, Carter, Shannon, Texas, Reynolds, Dent, Crawford, Phelps, Camden, Polk, Greene, Taney, Barry, Jackson, Vernon, Jasper, Newton, and McDonald counties.

*Lechea tenuifolia* Michx. Pinweed.

Rocky open woods and glades. Oxylophile. General, except in the Southeastern lowlands.

## Fam. VIOLACEAE

*Hybanthus concolor* (Forster) Spreng. Green Violet.

Rich woods and along shaded bluffs. Circumneutral to calciphile. General.

*Viola pedata* L. Bird-foot Violet, Wild Pansy.

Rocky open woods and prairies. Oxylophile. General, but commonest in east-central and southern Mo.

*Viola pedata* L. var. *lineariloba* DC.

In similar situations to the typical form and much commoner in most parts of the state.

*Viola missouriensis* Greene.

Low woods, thickets, and moist alluvial ground along streams. Circumneutral. General but scattered: Clark, Adair, Howard, Boone, Audrain, St. Charles, Gasconade, Franklin, St. Louis, Jefferson, Ste. Genevieve, Mississippi, Dunklin, Butler, Wayne, Madison, Ripley, Carter, Moniteau, Dallas, Hickory, Polk, Howell, Greene, Stone, Linn, Grundy, Daviess, Livingston, Platte, Clay, Jackson, Henry, Bates, Jasper, and Newton counties.

*Viola papilionacea* Pursh. See Bull. Vt. Agr. Exp. Sta. 224: 22. 1921.

*Viola pratensis* Greene.

Moist meadows, thickets, open woods, and waste or alluvial ground. Circum-

neutral. General. This species has often been confused with *Viola cucullata* which is not known in Missouri.

***Viola triloba* Schwein.**

Rocky or dry open woods and thickets. Oxylophile to circumneutral. Central and southern Mo. north to St. Louis, Warren, Boone, and Jackson counties. This species and the following variety have often been confused with *Viola palmata* which is not known to occur in Missouri.

***Viola triloba* var. *dilatata* (Ell.) Brainerd, Bull. Torr. Bot. Club 37: 587. 1910.**

Similar situations to the preceding and often found with it. Oxylophile to circumneutral. Central and southern Mo. south and east of a line drawn from St. Louis, Warren, Boone, Moniteau, and Polk counties to Jasper Co., and locally northwest in Atchison Co., northwestern Mo.

***Viola Lovelliana* Brainerd, Bull. Torr. Bot. Club 37: 526. 1910.**

Moist rocky ground. Circumneutral. Southern Mo., local: Ozark Co.

***Viola sororia* Willd.**

Open woods, rocky or dry slopes, and thickets. Oxylophile to circumneutral. General.

***Viola sagittata* Ait.**

Upland prairies, open banks, and glades. Oxylophile to circumneutral. General, but scattered: Putnam, Schuyler, Adair, Macon, Scotland, Knox, Shelby, Monroe, Audrain, Marion, Ralls, Pike, Randolph, Boone, Callaway, Franklin, Crawford, Washington, Iron, Madison, Carter, Phelps, Moniteau, Greene, Henry, Vernon, Barton, Jasper, Newton, Barry, and McDonald counties. A pubescent form of this species (*V. subsagittata* Greene) has sometimes been confused with *Viola fimbriatula* which is not known in Missouri.

***Viola emarginata* (Nutt.) LeConte.**

Prairies, glades, and open banks. Oxylophile to circumneutral. East-central and southern Mo.: St. Louis, Madison, Iron, Reynolds, Shannon, Oregon, Moniteau, Jasper, Newton, and McDonald counties.

***Viola pedatifida* G. Don. Prairie Violet.**

Prairies, borders of woods, and loess hills. Circumneutral. Northern, central, and western Mo.: Putnam, Schuyler, Scotland, Adair, Knox, St. Louis, Daviess, Atchison, Pettis, Cedar, Greene, Barry, Jackson, Cass, and Jasper counties.

***Viola viarum* Pollard.**

Moist woods, banks of streams, open ground along roads, and crevices of rocks along streams. Circumneutral. General but scattered: Schuyler, Sullivan, St. Louis, St. Francois, Crawford, Shannon, Oregon, Ozark, Pulaski, Laclede, Texas, Saline, Daviess, Worth, Atchison, Jackson, Henry, Hickory, Stone, Barry, and Jasper counties.

***Viola lanceolata* L. Narrow-leaved Violet.**

Moist sandy prairies, swampy open ground, and moist hummocks. Oxylophile. Southeastern Mo.: Mississippi and Dent counties.

***Viola pallens* (Banks) Brainerd. Northern White Violet.**

Banks of streams and moist ledges along bluffs of LaMotte sandstone. Oxylophile. Southeastern Mo., local: Ste. Genevieve Co.

***Viola pubescens* Ait. Yellow Violet.**

Rich woods and thickets. Circumneutral. Northern and eastern Mo.: Harrison, Mercer, Putnam, Sullivan, Schuyler, Shelby, Ralls, St. Louis, St. Francois, Stoddard, and Butler counties. This has frequently been confused with the next following.

***Viola eriocarpa* Schwein. See Rh. 23: 275. 1922; also Bull. Torr. Bot. Club 33: 194. 1911.**

*Viola scabriuscula* Schwein., in part (G), (B & B).

Rich, alluvial or rocky woods. Circumneutral. General.

***Viola eriocarpa* var. *lelocarpa* Fernald & Wiegand, Rh. 23: 275. 1922.**

*Viola scabriuscula* Schwein., in part (G), (B & B).

Rich, alluvial or rocky woods. Circumneutral. General and commoner than the species.

***Viola striata* Ait. Pale Violet.**

Moist rich or rocky woods, and alluvial ground along streams. Circumneutral. Eastern, middle, and southern Mo. south and east of a line drawn from Shelby, Randolph, Boone, and Hickory counties to Barry Co.

***Viola Rafinesquii* Greene. Wild Pansy, Johnny Jump-up.**

Prairies, glades, roadsides, and waste ground. Indifferent. General and common.

***Viola arvensis* Murr.**

Fields, roadsides, and waste ground. Indifferent. Introduced in Johnson Co.

***Viola papilionacea* × *pedatifida* Brainerd, Bull. Torr. Bot. Club 40: 249, pl. 15. 1913.**

Prairies and thickets. Western Mo., scattered: Jackson, Pettis, and Jasper counties.

***Viola papilionacea* × *triloba* Brainerd, Bull. Torr. Bot. Club 39: 90. 1912.**

Woods, thickets, and open banks. Jasper Co.

***Viola pedatifida* × *sagittata* Brainerd, Bull. Torr. Bot. Club 40: 252, pl. 16. 1913.**

Prairies. Jasper Co.

***Viola pedatifida* × *sororia* Brainerd, Bull. Torr. Bot. Club 40: 253, pl. 17. 1913.**

Loess hills. Atchison Co.

***Viola sororia* × *triloba* Brainerd, Bull. Torr. Bot. Club 39: 92. 1912.**

Open woods and thickets. Southern Mo., scattered: Oregon, Greene, and Jasper counties.

***Viola emarginata* × *sororia* Dowell, Proc. Staten Isl. Assoc. 3: 162. 1912.**

Prairies, thickets, and open banks. Jasper Co.

***Viola sagittata* × *sororia* Brainerd, Bull. Vt. Agr. Exp. Sta. 239: 193. 1924.**

Thickets and open banks. Jasper Co.

***Viola papilionacea* × *sororia* Brainerd, Bull. Torr. Bot. Club 37: 178. 1910.**

Moist woods, thickets, and open ground along roads and banks. Commonly found throughout the state where the parent species occur.

***Viola missouriensis* × *sororia*.**

Low open ground and banks. Sometimes occurring with the parent species.

## Fam. PASSIFLORACEAE

*Passiflora lutea* L.

Thickets and low or open rocky woods. Circumneutral. East-central and southern Mo. south and east of a line drawn from St. Charles, Warren, Montgomery, Morgan, Hickory, and Cedar counties to Jasper Co.

*Passiflora incarnata* L. Maypops, Passion Flower.

Fields, thickets, low alluvial woods, and along railroads and roadsides. Circumneutral to oxylophile. Southern Mo.: Scott, Mississippi, New Madrid, Stoddard, Pemiscot, Dunklin, Butler, Oregon, Greene, Lawrence, Barry, Jasper, and McDonald counties. Probably native in southeastern Mo. and introduced in some of the southwestern counties.

## Fam. LOASACEAE

*Mentzelia oligosperma* Nutt. Stick Leaf.

Exposed ledges along bluffs, glades, rocky open soil, and railway embankments. Calciphile to circumneutral. Central and southern Mo.: St. Charles, St. Louis, Phelps, Pulaski, Boone, Saline, Jackson, Henry, Greene, Jasper, and McDonald counties.

## Fam. CACTACEAE

*Opuntia Rafinesqui* Engelm. Prickly Pear.

Rocky prairies, glades, and open woods. Circumneutral to calciphile. Southern and central Mo. south of a line drawn from Ralls, Monroe, Boone, and Saline counties to Caldwell Co.

*Opuntia macrorhiza* Engelm.

Rocky ledges and glades. Oxylophile. Southwestern Mo.: Jasper, Newton, McDonald, and Barry counties.

*Mamillaria missouriensis* Sweet var. *caespitosa* (Engelm.) Wats. Nipple Cactus.

Rocky bluffs. Circumneutral to calciphile. Found in Pulaski Co., where perhaps native.

## Fam. THYMELAEACEAE

*Dicra palustris* L. Leatherwood.

Shaded rocky bluffs, banks of streams, and low alluvial woods. Oxylophile to circumneutral. Central and southern Mo., and locally in extreme northern Mo.: Mercer, Callaway, Warren, Perry, Bollinger, Wayne, Madison, Iron, Reynolds, Shannon, Oregon, Washington, Crawford, Phelps, Maries, Osage, Morgan, Benton, Laclede, Texas, Taney, Stone, and Barry counties.

## Fam. ELAEAGNACEAE

## ELAEAGNUS ANGUSTIFOLIA L. Russian Olive.

Cultivated and rarely escaped to thickets and waste ground. Pike and St. Louis counties.

## Fam. LYTHRACEAE

*Peplis diandra* Nutt. Water Purslane.

*Didiplis diandra* (Nutt.) Wood (G), (B & B).

Borders of ponds, sloughs, and ditches. Circumneutral. General but scattered: Livingston, Sullivan, Shelby, Audrain, St. Charles, St. Louis, Jefferson, Butler, Carter, Oregon, Greene, Clay, Jackson, and Jasper counties.

*Rotala ramosior* (L.) Koehne var. *interior* Fernald & Griscom, Rh. 37: 169. 1935.

Tooth-cup.

*Rotala ramosior* of auth. (G), (B & B), in part.

Wet prairies, ditches, sloughs, and margins of ponds and streams. Circumneutral. Central and southern Mo.: Randolph, Boone, Lincoln, St. Charles, Gasconade, St. Louis, Jefferson, Perry, Wayne, New Madrid, Butler, Dunklin, Iron, Madison, Dent, Laclede, Howell, Ozark, Taney, Cedar, Greene, Jackson, Barton, Jasper, Newton, and McDonald counties.

*Ammannia coccinea* Rottb. Tooth-cup.

Ditches, sloughs, and muddy margins of ponds and slow streams. Circumneutral. General.

*Ammannia auriculata* Willd.

Similar situations to the preceding. Circumneutral. Western Mo., south of the Missouri River: Jackson, Taney, Jasper, and McDonald counties.

*Lythrum alatum* Pursh. Winged Loosestrife.

Wet prairies and alluvial margins of small streams and ponds. Circumneutral. General.

*LYTHRUM SALICARIA* L. Purple Loosestrife.

Introduced in waste ground. Franklin Co.

*Cuphea petiolata* (L.) Koehne.

Open woods, thickets, prairies, and glades. Circumneutral. General.

#### Fam. MELASTOMACEAE

*Rhexia mariana* L. var. *leiosperma* Fernald & Griscom, Rh. 37: 171. 1935.

Meadow Beauty.

Moist sandy open ground, and borders of bogs. Oxylophile. Southeastern Mo.: Mississippi, Stoddard, Dunklin, Butler, and Ripley counties.

*Rhexia virginica* L. Deer-grass, Meadow Beauty.

Moist open ground and borders of bogs. Oxylophile. Southeastern Mo.: St. Francois, Iron, Dunklin, Butler, and Dent counties.

*Rhexia interior* Pennell.

*Rhexia latifolia* Bush, not Aubl. See Rh. 13: 167. 1911.

*Rhexia virginica* of auth., not L. (B & B), in part.

Moist sandy soil along prairie streams. Oxylophile. Southwestern Mo.: Greene, Lawrence, Vernon, Barton, and Jasper counties.

#### Fam. ONAGRACEAE

*Jussiaea decurrens* (Walt.) DC. Primrose-willow.

Swamps, bayous, and still streams. Circumneutral. Southern Mo.: Wayne, Scott, Mississippi, New Madrid, Pemiscot, Dunklin, Butler, and Barry counties.

*Jussiaea diffusa* Forsk. Floating Primrose-willow.

Sloughs, ponds, and slow streams; in shallow water or on mud. Circumneutral. General.

**Ludvigia alternifolia** L. Seed-box.

Prairie swales, low open woods, and borders of streams. Circumneutral. General.

**Ludvigia polycarpa** Short & Peter. False Loosestrife.

Wet open woods and along prairie streams and sloughs. Circumneutral. General but scattered: Putnam, Clark, Shelby, Dekalb, Randolph, Boone, St. Louis, Jefferson, Iron, Ripley, Ray, Jackson, and Jasper counties.

**Ludvigia palustris** (L.) Ell. var. *americana* (DC.) Fernald & Griseom, Rh. 37: 176. 1935.

*Ludvigia palustris* of auth. in part (G), (B & B).

Low wet woods, and borders of slow streams, ponds, and ditches. Circumneutral. General.

**Ludvigia natans** Ell. var. *typica* Fernald & Griseom, Rh. 37: 175. 1935.

Border of pond. Southwestern Mo., local: Greene Co.

**Ludvigia glandulosa** Walt.

Low wet woods, swamps, and bayous. Circumneutral to oxylophile. Southeastern Mo.: Bollinger, Stoddard, New Madrid, Pemiscot, Dunklin, Butler, and Ripley counties.

**Epilobium coloratum** Muhl. Willow Herb.

Bogs and wet ground along small streams. Circumneutral. General but scattered: Putnam, Boone, St. Louis, Jefferson, Franklin, Ste. Genevieve, Washington, Iron, Shannon, Dent, Phelps, Greene, Taney, Stone, Barry, Jackson, Newton, and McDonald counties.

**Epilobium densum** Raf.

Bogs and wet ground along streams. Circumneutral. Local: Jackson Co.

**Oenothera rhombipetala** Nutt. Evening Primrose.

Sandy open ground. Oxylophile. Eastern and central Mo., scattered: Clark, Ralls, St. Louis, Phelps, and Jackson counties.

**Oenothera parviflora** L. See Rh. 26: 4. 1924.

*Oenothera muricata* L. (G), (B & B).

Open woods, thickets, prairies, and waste ground. Circumneutral. General and common.

**Oenothera strigosa** (Rydb.) Mack. & Bush.

*Oenothera muricata* var. *canescens* (T. & G.) Robinson (G).

Fields, prairies, and waste ground. Circumneutral. General: Putnam, Adair, Jefferson, Phelps, Scotland, Worth, Gentry, Dekalb, Grundy, Randolph, Jackson, Henry, and Jasper counties.

**Oenothera laciniata** Hill.

Fields, prairies, roadsides, and waste ground. Circumneutral. General.

**Oenothera laciniata** var. *grandiflora* (Wats.) Robinson.

Occasionally found with the typical form. Scattered: Jackson and Jasper counties.

**Oenothera linifolia** Nutt. Sundrops.

Fields, prairies, and glades. Oxylophile. Central and southern Mo.: Lincoln, Montgomery, Warren, St. Charles, St. Louis, Jefferson, Franklin, Washington,



Crawford, St. Francois, Ste. Genevieve, Perry, Madison, Bollinger, Iron, Wayne, Dunklin, Ripley, Carter, Reynolds, Shannon, Texas, Dent, Oregon, Gasconade, Maries, Phelps, Pulaski, Laclede, St. Clair, Greene, Lawrence, Jackson, Vernon, Barton, Jasper, and Newton counties.

*Oenothera fruticosa* L. See Rh. 20: 51. 1918. Sundrops.

*Oenothera linearis* Michx. (G).

*Kneiffia linearis* (Michx.) Spach (B & B).

Rocky and sandy open ground. Oxylophile. Southern Mo., scattered: Jefferson, Shannon, and Barry counties.

*Oenothera hybrida* Michx. See Rh. 24: 177. 1922.

*Oenothera fruticosa* var. *hirsuta* Nutt. (G).

Rocky and sandy open ground. Oxylophile. Western Mo., local: Henry Co.

*Oenothera pratensis* (Small) Robinson.

*Kneiffia pratensis* Small (B & B).

Moist alluvial ground. Circumneutral. Eastern and southern Mo.: Marion, St. Louis, Jefferson, Wayne, Phelps, and Howell counties.

*Oenothera speciosa* Nutt. White Evening Primrose.

*Hartmannia speciosa* (Nutt.) Small (B & B).

Limestone glades and prairies. Calciphile. General but scattered: Adair, Boone, St. Louis, Crawford, Dent, Wayne, Butler, Wright, Greene, Jackson, Johnson, Henry, St. Clair, Vernon, Jasper, and Newton counties.

*Oenothera triloba* Nutt.

*Lavauzia triloba* (Nutt.) Spach (B & B).

Limestone glades and prairies. Calciphile. Southern Mo., scattered: Iron and McDonald counties, and also introduced in Benton and Jasper counties.

*Oenothera missouriensis* Sims. Glade Lily, Missouri Primrose.

*Megapterium missouriense* (Sims) Spach (B & B).

Glades, bald knobs, and rocky prairies. Calciphile. Central and southern Mo.: St. Louis, Jefferson, Franklin, Washington, Crawford, Ste. Genevieve, Stoddard, Shannon, Texas, Phelps, Maries, Pulaski, Miller, Laclede, Camden, Dallas, Cedar, Wright, Webster, Greene, Douglas, Ozark, Taney, Stone, Bates, Lawrence, and Barry counties. The specific name was originally spelled *missouriensis* by the author.

*Oenothera serrulata* Nutt.

*Meriolia serrulata* (Nutt.) Walp. (B & B).

Loess hills, fields, and prairies. Circumneutral to calciphile. Northern and central Mo.: Marion, St. Louis, Boone, Atchison, Holt, and Jackson counties.

*Oenothera biennis* L.

Fields, thickets, and waste ground. Circumneutral. General and common.

*Gaura biennis* L.

Rocky prairies, thickets, and glades. Circumneutral. General.

*Gaura alpes* Spach.

Rocky open woods. Circumneutral. Southern Mo., local: Phelps Co.

*Gaura parviflora* Dougl.

Prairies, waste ground, and along railroads and roadsides. Circumneutral. Northern, central, and western Mo., scattered: Shelby, Marion, St. Louis, Boone,

Atechison, Holt, Andrew, Platte, Clay, Jackson, Carroll, and Jasper counties. Introduced from farther west except perhaps in northwestern Mo.

*Gaura parviflora* var. *lachnocarpa* Weatherby, Rh. 27: 14. 1925.

Occasionally found with the typical form. Jackson and Jasper counties.

*Gaura coccinea* Pursh.

Plains and loess hills. Calciphile. Northwestern Mo.: Atechison and Holt counties, and also introduced along railroads in Clay and Jackson counties.

*Stenosiphon linifolius* (Nutt.) Britton.

Bald knobs and glades. Calciphile. Southern Mo.: Ozark and Taney counties.

*Circaea latifolia* Hill. See Rh. 19: 87. 1917. Enchanter's Nightshade.

*Circaea lutetiana* of Am. auth., not L. (G), (B & B).

Rich woods and thickets. Circumneutral. General.

### Fam. HALORAGIDACEAE

*MYRIOPHYLLUM PROSERPINACOIDES* Gill. Water Feather.

Shallow water and muddy margins of ponds. Circumneutral. Scattered: Crawford, Texas, and Jasper counties. A Chilean species often cultivated in aquaria and pools.

*Myriophyllum scabratum* Michx.

Slow streams, sloughs, ponds, and ditches. Circumneutral. General but scattered: Scotland, Monroe, Pike, St. Charles, St. Louis, Butler, Carter, Howell, Jackson, and Jasper counties.

*Myriophyllum heterophyllum* Michx. Water Milfoil.

Slow streams, sloughs, ponds, and spring branches. Circumneutral. East-central and southern Mo.: St. Charles, St. Louis, Jefferson, Perry, Wayne, Dunklin, Butler, Ripley, Carter, Oregon, Crawford, Phelps, Pulaaki, Texas, Howell, Ozark, Laclede, Dallas, Greene, and Jasper counties.

*Proserpinaca palustris* L. See Rh. 37: 177. 1935.

Ponds, sloughs, and slow streams. Circumneutral. Southeastern Mo.: New Madrid, Dunklin, and Butler counties.

*Proserpinaca palustris* var. *amblyogona* Fernald, Rh. 11: 120. 1909.

In similar situations to the typical form. Circumneutral. Southeastern Mo.: Butler and Dunklin counties.

*Proserpinaca palustris* var. *crebra* Fernald & Griscom, Rh. 37: 177. 1935.

Swampy woods, ponds, and sloughs. Circumneutral. Scattered: Livingston, St. Louis, Jefferson, Shannon, Barton, and Jasper counties. This is the commonest variety in Missouri.

### Fam. ARALIACEAE

*Aralia spinosa* L. Tear Blanket, Hercules' Club.

Low woods and thickets. Circumneutral. Southeastern Mo.: Cape Girardeau, Bollinger, Madison, Wayne, Stoddard, Dunklin, Butler, and Ripley counties, and also introduced in St. Louis Co.

***Aralia racemosa* L. American Spikenard.**

Rich wooded hillsides, and along shaded bluffs. Circumneutral to oxylophile. Eastern and middle Mo.: Sullivan, Schuyler, Clark, Lewis, Marion, Ralls, Boone, Callaway, Montgomery, Lincoln, Warren, St. Charles, St. Louis, Jefferson, Franklin, Ste. Genevieve, Perry, Bollinger, Stoddard, Scott, Wayne, Reynolds, Shannon, Carter, Oregon, Howell, Texas, Dent, Phelps, Morgan, Benton, Laclede, Douglas, and Ozark counties.

***Panax quinquefolium* L. Ginseng.**

Rich woods and along the base of rocky bluffs. Circumneutral. General but uncommon and being exterminated in many sections through persistent digging by natives: Clark, Pike, Boone, St. Louis, Jefferson, Franklin, Bollinger, Shannon, Jackson, and Greene counties.

## Fam. UMBELLIFERAE

***Eryngium yuccifolium* Michx. Button Snakeroot, Rattlesnake Master.**

Rocky open woods, prairies, and glades. Circumneutral. General.

***Eryngium prostratum* Nutt.**

Low wet woods, sandy prairies, and borders of swamps and ponds. Circumneutral to oxylophile. Southeastern Mo.: Scott, Mississippi, Stoddard, Dunklin, Butler, Ripley, Shannon, Texas, and Howell counties.

***Sanicula gregaria* Bicknell. Black Snakeroot.**

Rocky open woods and thickets. Circumneutral. General.

***Sanicula canadensis* L.**

Rocky open woods and thickets. Circumneutral. General.

***Sanicula Smallii* Bicknell.**

Rich woods. Circumneutral. Southeastern Mo.: Ripley Co.

***Erigenia bulbosa* (Michx.) Nutt. Harbinger-of-spring.**

Rich woods, alluvial thickets, and along the base of rocky bluffs. Circumneutral to calciphile. East-central and southern Mo.: Randolph, Boone, Audrain, Callaway, Montgomery, Warren, St. Louis, Jefferson, Franklin, Gasconade, Washington, St. Francois, Ste. Genevieve, Madison, Bollinger, Wayne, Shannon, Phelps, Pulaski, Moniteau, Laclede, Greene, Taney, Douglas, and Jasper counties.

***Chaerophyllum procumbens* (L.) Crantz. Wild Chervil.**

Rich or rocky open woods, thickets, glades, and open alluvial ground. Circumneutral. General.

***Chaerophyllum procumbens* var. *Shortii* T. & G.**

*Chaerophyllum Shortii* (T. & G.) Bush (S).

Similar situations to the preceding. Scattered: St. Louis, Taney, and Jackson counties.

***Chaerophyllum texanum* Coult. & Rose. See Rh. 11: 52. 1909.**

Rocky prairies and glades. Circumneutral. Central and southern Mo.: Bollinger, Boone, Taney, Jackson, St. Clair, Greene, Barry, Vernon, Jasper, and Newton counties.

***Chaerophyllum Tainturieri* Hook. var. *floridanum* Coult. & Rose.**

Glades and rocky waste ground. Southern Mo., scattered: Dunklin, Butler, Barry, and Jasper counties.

***Osmorhiza Claytoni* (Michx.) Clarke. Woolly Sweet Cicely.**

Rich woods and thickets. Circumneutral. General.

***Osmorhiza longistylis* (Torr.) DC. Smooth Sweet Cicely.**

Rich woods and thickets. Circumneutral. General.

***Osmorhiza longistylis* var. *villicaulis* Fernald.**

Sometimes found with the typical form. Scattered.

***Spermolepis patens* (Nutt.) Robinson.**

Rocky prairies and glades. Circumneutral. General but scattered: Macon, Boone, St. Louis, Jefferson, Scott, Clay, Jackson, Greene, Taney, Barry, Jasper, and Newton counties.

***Spermolepis echinata* (Nutt.) Heller.**

Rocky prairies, glades, and sandy or gravelly ground along streams. Oxylophile. Bollinger, Scott, Iron, Carter, Ripley, Polk, Jasper, and Newton counties.

***CONIUM MACULATUM* L. Poison Hemlock.**

Waste ground and along railroads and roadsides. Indifferent. Central and southern Mo., scattered: St. Louis, Washington, Madison, Cole, Saline, Lawrence, Jasper, and Newton counties.

***Ptilimnium capillaceum* (Michx.) Raf. Mock Bishop's-weed.**

Swamps and prairie swales. Circumneutral. East-central and southern Mo., scattered: St. Louis, Jefferson, New Madrid, Butler, Ripley, Greene, and Jasper counties.

***Ptilimnium Nuttallii* (DC.) Britton.**

Prairie swales, wet meadows, and depressions in glades. Circumneutral to oxylophile. Central and southern Mo.: St. Louis, Jefferson, Franklin, Iron, Wayne, Bollinger, Mississippi, Dunklin, Butler, Ripley, Pulaski, Howell, Greene, Jackson, Vernon, Barry, Jasper, Newton, and McDonald counties.

***Cicuta maculata* L. Spotted Cowbane.**

Borders of ponds, sloughs, and prairie streams. Circumneutral. General.

***CARUM CARVI* L. Caraway.**

Occasionally escaped from gardens to roadsides and waste ground. Indifferent. Scattered: Boone and Jackson counties.

***Sium suave* Walt. See Rh. 17: 131. 1915. Water Parsley.**

*Sium cicutaefolium* J. F. Gmel. (G), (B & B).

Swamps and wet prairies. Circumneutral. Northern, central, and eastern Mo.: Shelby, St. Charles, St. Louis, Mississippi, New Madrid, Dunklin, Ripley, Boone, Livingston, and Jackson counties.

***Cryptotaenia canadensis* (L.) DC. Honewort.**

Rocky woods and ledges along bluffs. Circumneutral. General.

***Zizia aurea* (L.) Koch. Golden Alexanders, Meadow Parsnip.**

Rich rocky woods and thickets. Circumneutral to calciphile. General.

***Xizia cordata* (Walt.) DC.**

Rich rocky woods, thickets, and prairies. Circumneutral. Central and southern Mo.: St. Louis, Jefferson, Franklin, Madison, Iron, Reynolds, Carter, Oregon, Shannon, Boone, Hickory, Taney, Stone, Barry, Jackson, Jasper, and McDonald counties.

***Taenidia integerrima* (L.) Drude. Yellow Pimpernel.**

Rocky open woods and ledges along bluffs. Calciphile to circumneutral. General, but commonest in the Ozark region.

***Eulophus americanus* Nutt.**

Rocky open woods and glades. Calciphile to circumneutral. East-central and southern Mo.: Franklin, Jefferson, Washington, Phelps, Shannon, Texas, Greene, Wright, Webster, Taney, Barry, Jasper, and Newton counties.

***Bupleurum rotundifolium* L. Thorough-wax.**

Fields and waste ground. Circumneutral. Scattered: Jefferson, Franklin, Washington, and Clay counties.

***Cynosciadium pinnatum* DC.**

Pools and wet depressions in glades. Oxylophile. Southwestern Mo.: Newton and McDonald counties.

***Cynosciadium digitatum* DC.**

Low wet woods and swamps. Circumneutral to oxylophile. Southeastern Mo., local: Dunklin Co.

***Ligusticum canadense* (L.) Britton. Angelico.**

Rocky woods and moist ground along streams. Circumneutral to oxylophile. Southern Mo.: Iron, Bollinger, Ripley, Oregon, Shannon, Texas, Howell, Wright, Webster, Douglas, Stone, and McDonald counties.

***Coriandrum sativum* L. Coriander.**

Occasionally escaped from gardens to roadsides and waste ground. Indifferent. Scattered: St. Louis, Boone, and Jackson counties.

***Foeniculum vulgare* Hill. Fennel.**

Sometimes escaping from gardens to roadsides and waste ground. Indifferent. Scattered: St. Louis, Boone, and Jackson counties.

***Thaspium barbinode* (Michx.) Nutt.**

Rocky open woods, and along banks and bluffs of streams. Circumneutral to oxylophile. Eastern, southern, and central Mo.

***Thaspium trifoliatum* (L.) Gray var. *flavum* Blake, Rh. 20: 53. 1918.**

*Thaspium aureum* of auth., not Nutt. (G).

*Thaspium trifoliatum* (L.) Britton, in part (B & B).

Thickets and rocky prairies. Circumneutral. General.

***Cogswellia daucifolia* (Nutt.) M. E. Jones, Contr. West. Bot. 12: 34. 1908.**

*Lomatium daucifolium* (Nutt.) Coult. & Rose (G).

Limestone glades. Calciphile. West-central Mo.: Jackson and Cass counties.

***Polytaenia Nuttallii* DC. Prairie Parsley.**

Rocky prairies and glades. Calciphile to circumneutral. General.

***Pastanica sativa* L. Parsnip.**

Escaped from cultivation and common in field, waste ground, and along roadsides and railroads. Indifferent. General.

***Heracleum lanatum* Michx.** Cow Parsnip.

Moist rich woods and thickets. Circumneutral. Scattered: St. Louis, Cass, and Jasper counties.

***Levisticum officinale* (L.) Koch.** Lovage.

Escaped from cultivation to waste ground and roadsides. Washington Co.

***Anethum graveolens* L.** Dill.

Cultivated and rarely escaped to roadsides and waste ground. Jackson Co.

***Oxypolis rigidior* (L.) Coult. & Rose.** Cowbane.

Moist shaded bluffs and wet ground along streams. Calciphile to circumneutral. Eastern, central, and southern Mo.: Shelby, St. Louis, Jefferson, Franklin, Washington, Iron, Bollinger, Reynolds, Carter, Ripley, Shannon, Dent, Pulaski, Laclede, Dallas, Texas, Polk, Howell, Douglas, Greene, Taney, Barry, Jasper, and Jackson counties.

***Oxypolis rigidior* var. *ambigua* (Nutt.) Robinson.**

In similar situations to the typical form. Calciphile to circumneutral. Eastern and southern Mo.: Shelby, Dent, Iron, Shannon, Texas, and Laclede counties.

***Conioselinum chinense* (L.) BSP.** Hemlock Paraley.

Waste ground and along small streams. Indifferent. Southwestern Mo.: Christian, Lawrence, and Jasper counties.

***Angelica villosa* (Walt.) BSP.** Wood Angelica.

Rocky woods and glades. Circumneutral to oxylophile. Southern Mo.: Crawford, Iron, Carter, Shannon, Oregon, Dent, Phelps, Texas, Howell, Ozark, Pulaski, Wright, Webster, Douglas, Greene, Barry, and McDonald counties.

***Toxilis anthriscus* (L.) Bernh.** Hemlock Chervil.

Roadsides and waste ground. Indifferent. Recently introduced in many places and becoming general: Schuyler, Jefferson, Carter, Oregon, Howell, Boone, Saline, Camden, Pulaski, Phelps, Benton, Dallas, Wright, Douglas, Greene, Clay, Jackson, Cass, Johnson, Cedar, Vernon, Jasper, and McDonald counties.

***Daucus pusillus* Michx.**

Rocky prairies and glades. Circumneutral to oxylophile. Scattered, but commonest in southwestern Mo.: Schuyler, Linn, Benton, Ozark, Taney, Stone, Barry, Jasper, Newton, and McDonald counties.

***Daucus carota* L.** Queen Anne's Lace, Carrot.

Fields, waste ground, and along railroads and roadsides. Indifferent. Escaped from cultivation. General.

### Fam. CORNACEAE

***Cornus florida* L.** Flowering Dogwood.

Rocky open woods, bluffs, and thickets. Circumneutral to oxylophile. Eastern, central, and southern Mo.; common in the Ozark region.

***Cornus florida* f. *rubra* (West) Palmer & Steyermark, comb. nov.**

*Cornus florida* var. *rubra* West.

Rarely found with the typical form. Jasper Co.



***Cornus alternifolia* L. f.** Pigeon Berry, Alternate-leaved Dogwood.

Along bluffs and banks of streams. Circumneutral to oxylophile. Eastern and middle Mo., mostly along the larger rivers and locally in the eastern Ozark region: Clark, Lewis, Boone, Callaway, St. Louis, Jefferson, Dent, Shannon, and Texas counties.

***Cornus obliqua* Raf.** Kinnikinnik, Swamp Dogwood.

*Cornus Purpusi* Koehne.

*Cornus Amomum* of auth. in part, not Mill. (G), (B & B).

Thickets, wet prairies, bogs, and along beds of small streams. Circumneutral. General, and probably in every county.

***Cornus asperifolia* Michx.** Rough-leaved Dogwood.

Thickets and borders of woods; in dry rocky, or sometimes in moist, alluvial ground. Circumneutral. General, and probably in every county.

***Cornus femina* Mill.** Stiff Dogwood.

*Cornus stricta* Lam. (G). (B & B).

Swamps and low open ground. Circumneutral. Southeastern Mo.: Cape Girardeau, Bollinger, Scott, Mississippi, New Madrid, Dunklin, Stoddard, Butler, Ripley, Carter, Reynolds, and Iron counties.

***Cornus racemosa* Lam.** Gray Dogwood.

*Cornus paniculata* L'Her. (G).

*Cornus femina* of auth., not Mill. (B & B).

Low woods and thickets, and wet rocky ground along streams. Circumneutral. General but scattered.

***Nyssa sylvatica* Marsh.** Black Gum.

Rocky or alluvial woods along streams and hillsides. Circumneutral to oxylophile. Central and southern Mo., south and east of a line drawn from Jefferson, Franklin, Cole, and Benton counties to Newton Co.

***Nyssa aquatica* L.** Tupelo.

Swamps and low wet woods. Circumneutral. Southeastern Mo.: Bollinger, Cape Girardeau, Scott, Mississippi, New Madrid, Pemiscot, Dunklin, Stoddard, Butler, and Ripley counties.

## Fam. ERICACEAE

***Monotropa uniflora* L.** Indian Pipe, Ghost Flower.

Woods and thickets. Oxylophile to circumneutral. General but scattered: Macon, Boone, Lincoln, St. Louis, Ste. Genevieve, Franklin, Jefferson, Washington, Crawford, Stoddard, Dunklin, Butler, Carter, Shannon, Howell, Ozark, Webster, Greene, Stone, Harrison, Platte, Jackson, Jasper, Newton, and McDonald counties.

***Monotropa hypopitys* L.** Pinesap.

Rich or rocky woods, and gravelly banks. Oxylophile. East-central and southern Mo., scattered: St. Louis, Jefferson, Ste. Genevieve, Shannon, Greene, Jasper, Newton, and McDonald counties.

***Rhododendron nudiflorum* (L.) Torr. var. *roseum* (Lois.) Wiegand, Rh. 26: 4. 1924.** Wild Honeysuckle.

*Rhododendron nudiflorum* Torr., in part (G).

*Azalea nudiflora* L., in part (B & B).

Rocky wooded hillsides and bluffs. Oxylophile: usually on siliceous or granitic rocks. Southern Mo., mainly in the eastern Ozark region: Ste. Genevieve, Cape Girardeau, Bollinger, Madison, Iron, Reynolds, Wayne, Ripley, Douglas, and Ozark counties.

**Vaccinium arboreum** Marsh. Farkleberry.

Rocky woods and bluffs: Oxylophile. Southern Mo.: Perry, Bollinger, Oregon, Gasconade, Shannon, and Howell counties.

**Vaccinium arboreum** var. *glaucescens* (Greene) Sarg.

*Batodendron glaucescens* Greene (S).

*Batodendron andrachnaeforme* Small (S).

Rocky woods and bluffs. Oxylophile; usually on siliceous or granitic rocks. East-central and southern Mo.: Lincoln, St. Louis, Jefferson, Ste. Genevieve, St. Francois, Perry, Bollinger, Madison, Iron, Reynolds, Wayne, Butler, Dunklin, Washington, Carter, Ripley, Oregon, Shannon, Dent, Crawford, Gasconade, Phelps, Pulaaki, Texas, Howell, Douglas, Ozark, Taney, Stone, Barry, Jasper, Newton, and McDonald counties.

**Vaccinium stamineum** L. High-bush Huckleberry, Deerberry.

Rocky woods and glades. Oxylophile. Southern Mo.: Washington, St. Francois, Ste. Genevieve, Iron, Madison, Bollinger, Wayne, Carter, Ripley, Oregon, Shannon, Texas, Howell, Douglas, Webster, Ozark, Greene, Christian, Taney, Stone, Barry, Newton, and McDonald counties.

**Vaccinium stamineum** var. *neglectum* (Small) Deam, Indiana Dept. Conserv. Publ. 44: 288. rev. ed. 1932.

*Polycodium neglectum* Small (S).

*Vaccinium neglectum* (Small) Fernald (G).

Rocky open woods and glades. Oxylophile. Southern Mo.: Ste. Genevieve, Bollinger, Madison, Iron, Reynolds, Wayne, Dunklin, Ripley, Carter, Oregon, Shannon, Dent, Texas, Howell, Douglas, Webster, Ozark, Taney, Stone, Cedar, Barry, and McDonald counties.

**Vaccinium stamineum** var. *interius* (Ashe) Palmer & Steyermark, comb. nov.

*Polycodium interius* Ashe, Jour. Elisha Mitchell Sci. Soc. 46: 210. 1931.

Rocky open woods. Oxylophile. Southern Mo., scattered: Shannon and Barry counties.

**Vaccinium melanocarpum** Mohr. High-bush Huckleberry, Southern Gooseberry.

Rocky open woods. Oxylophile. Southern Mo.: Wayne, Carter, Barry, and McDonald counties.

**Vaccinium virgatum** Ait. var. *tenellum* (Ait.) Gray.

Moist sandy or rocky ground. Oxylophile. Southeastern Mo.: Ste. Genevieve, Bollinger, Madison, and Butler counties.

**Vaccinium vacillans** Kalm. Low-bush Huckleberry, Low-bush Blueberry.

Rocky open woods, glades, and bluffs. Oxylophile. Southern Mo., scattered and mostly in the eastern Ozark region: Jefferson, St. Francois, Madison, Iron, Dunklin, Shannon, and McDonald counties.

**Vaccinium vacillans** var. *crinitum* Fernald, Rh. 13: 236. 1911.

*Vaccinium missouriense* Ashe.

Rocky open woods, glades, and bluffs. Oxylophile. Central and southern Mo., south and east of a line drawn from Lincoln, Boone, and Henry counties to Jasper Co. This is the commonest form in Missouri and throughout the Ozark region.

### Fam. PRIMULACEAE

#### *Androsace occidentalis* Pursh.

Rocky prairies, fields, open woods, and bluffs. Calciphile to circumneutral. Eastern, southern, and central Mo., south and east of a line drawn from Marion and Boone counties to Jackson Co., and locally northwest in Daviess Co.

#### *Hottonia inflata* Ell. Water Violet.

Swamps, sloughs, and bayous. Circumneutral to oxylophile. Eastern Mo., south of the Missouri River: St. Louis, Jefferson, Bollinger, Wayne, and Dunklin counties.

#### *Samolus parviflorus* Raf. Water Pimpernel.

*Samolus floribundus* HBK. (G), (B & B).

Low wet woods, swamps, spring branches, and wet ledges along bluffs. Calciphile to circumneutral. East-central and southern Mo.: Ralls, Randolph, Boone, Callaway, Montgomery, Warren, St. Louis, Jefferson, Franklin, Ste. Genevieve, St. Francois, Perry, Bollinger, Madison, Mississippi, Dunklin, Butler, Wayne, Ripley, Carter, Reynolds, Oregon, Dent, Shannon, Howell, Texas, Crawford, Phelps, Miller, Morgan, Benton, St. Clair, Hickory, Polk, Dallas, Laclede, Douglas, Ozark, Taney, Greene, Stone, Barry, Jasper, and McDonald counties.

#### *Lysimachia thyrsiflora* L. Tufted Loosestrife.

Swamp and bogs. Circumneutral to oxylophile. Western Mo., local: Jackson Co.

#### *LYSIMACHIA NUMMULARIA* L. Moneywort.

Low wet woods and boggy open ground. Circumneutral. Scattered: Marion, Boone, St. Louis, Perry, Madison, Oregon, Gasconade, Platte, Clay, and Jackson counties.

#### *Steironema ciliatum* (L.) Raf.

Moist open woods, prairie swales, and banks of ponds and streams. Circumneutral. General.

#### *Steironema radicans* (Hook.) Gray.

Low wet woods, and borders of streams and bayous. Circumneutral. Bollinger, Stoddard, New Madrid, Pemiscot, Dunklin, Butler, and Ripley counties.

#### *Steironema lanceolatum* (Walt.) Gray.

Wet or rocky dry woods, thickets, swamps, and banks of streams. Oxylophile to circumneutral. Eastern, southern, and central Mo.: Knox, Shelby, Randolph, Boone, Audrain, Callaway, Montgomery, Lincoln, St. Louis, Jefferson, Franklin, Washington, Ste. Genevieve, Bollinger, Madison, Wayne, Iron, Reynolds, Carter, Ripley, Oregon, Crawford, Dent, Phelps, Maries, Cole, Wright, Webster, Greene, Ozark, Jackson, Cass, Jasper, and McDonald counties.

#### *Steironema lanceolatum* var. *angustifolium* (Lam.) Gray.

Occasionally found with the typical form. Scattered: Jefferson, Shannon, and Greene counties.

***Steironema lanceolatum* var. *hybridum* (Michx.) Gray.**

Low open ground. Circumneutral. Scattered: Knox, St. Louis, Mississippi, Boone, and Jackson counties.

***Steironema quadriflorum* (Sims) Hitchc.** Crosswort, Whorled Loosestrife.

Low wet woods and rocky banks of streams. Calciphile to circumneutral. East-central and southern Mo.: St. Louis, Jefferson, Washington, Iron, Butler, Ripley, Oregon, Shannon, Dent, Crawford, Phelps, Laclede, Texas, Howell, Douglas, Ozark, Greene, and Taney counties.

***ANAGALLIS ARVENSIS* L.** Poor Man's Weatherglass, Scarlet Pimpernel.

Fields, glades, and waste ground. Circumneutral. Central and southern Mo.: St. Louis, Jefferson, Franklin, Washington, Ste. Genevieve, Bollinger, Madison, Boone, Phelps, Ozark, Miller, Polk, Greene, and McDonald counties.

***ANAGALLIS ARVENSIS* var. *CAERULEA* (Schreb.) Ledeb.**

Similar situations to the typical form. Scattered: St. Louis, Franklin, Gasconade, and Miller counties.

***Centunculus minimus* L.** Chaffweed.

Meadows, prairies, and glades. Circumneutral. Central and southern Mo., scattered: Boone, St. Charles, St. Louis, Jefferson, Crawford, Shannon, Greene, Barry, Jackson, Jasper, and McDonald counties.

***Dodecatheon Meadia* L.** Shooting Star.

Prairies, glades, bluffs, and moist wooded hillsides. Circumneutral to oxylophile. General but uncommon in many localities.

**Fam. SAPOTACEAE*****Bumelia lycioides* (L.) Pers.** Southern Buckthorn.

Low woods. Circumneutral. Southeastern Mo.: Pemiscot and Butler counties.

***Bumelia lanuginosa* (Michx.) Pers.** Chittim-wood, Gum-elastic.

Dry rocky woods, bluffs, and glades. Circumneutral. Central and southern Mo., south of a line drawn from Lincoln, Boone, Pettis and St. Clair to Barton Co.

**Fam. EBENACEAE*****Diospyros virginiana* L.** Persimmon.

Prairies, borders of woods, and along small streams. Circumneutral. General but commonest in central and southern Mo.

***Diospyros virginiana* f. *pumila* Palmer & Steyermark, f. nov.**

Rocky open woods and glades. West-central Mo.: Jackson and Bates counties.

Frutex 2-4 m. altus vel raro arbor ad 7-8 m. alta; a typo differt foliis minoribus dense pubescentibus; ramulis novellis, petiolis sepalisque dense pubescentibus.

This form differs from the variety *pubescens* in its usually shrubby habit, in the generally smaller leaves, and the more densely tomentose branchlets, foliage, and calyx. It differs from the variety *platycarpa* in the much smaller, more pubescent leaves, and in the smaller fruit, which is oblong or subglobose and not flattened or depressed. The leaves of this proposed form are oblong or oblong-

lanceolate, rounded or abruptly pointed at the apex, usually rounded or subcordate at the base, ciliate on the margins, dark green and scabrate above when young, but becoming glabrous, permanently densely pubescent on the pale under surface. The short stout petioles (8–15 mm. long) are densely pubescent, as is also the calyx.

MISSOURI: Dodson, June 6, 1913, *B. F. Bush 7041* (Arn. Arb. TYPE); Westport, June 10, 1900, *B. F. Bush 787* (Arn. Arb.); Greenwood, June 5, 1923, *B. F. Bush 10092* (Arn. Arb.); Greenwood, Sept. 5, 1924, *E. J. Palmer 26030* (Arn. Arb.); Monteith Junction, Bates Co., Sept. 10, 1924, *E. J. Palmer 26080* (Arn. Arb.); ARKANSAS: Hot Springs, Garland Co., April 21, Oct. 9, 1925, *E. J. Palmer 26840, 29109* (Arn. Arb.).

Although the American persimmons vary greatly in foliage and fruit, it is difficult to find constant characters on which to separate the different forms. The one here described looks so well marked that it might well be regarded as a distinct species or variety, but since a specimen cultivated at the Arnold Arboretum from seed collected at the type locality does not retain the distinctive shape of the small leaves, it is perhaps best to regard it as an ecological form.

*Diospyros virginiana* var. *platycarpa* Sarg. Jour. Arnold Arb. 2: 168. 1921.

Circumneutral to calciphile. East-central and southern Mo., scattered: St. Louis, Dunklin, Carter, Shannon, Christian, Barton, and Jasper counties.

*Diospyros virginiana* var. *pubescens* (Pursh) Dippel, Handb. Laubholz. 1: 306. 1889.

*Diospyros pubescens* Pursh.

Frequently found with the typical form. Scattered: Marion, Ralls, Boone, Callaway, St. Louis, Wayne, Oregon, Ozark, Johnson, Greene, Stone, and McDonald counties.

### Fam. STYRACACEAE

*Styrax americana* Lam. Smooth Storax.

Swamps and low wet woods. Circumneutral to oxylophile. Southeastern Mo.: Bollinger, Mississippi, New Madrid, Pemiscot, Dunklin, Butler, and Ripley counties.

### Fam. OLEACEAE

*Fraxinus americana* L. White Ash.

Upland woods, glades, and borders of streams. Circumneutral. General, and probably in every county.

*Fraxinus americana* var. *subcoriacea* Sarg. Bot. Gaz. 67: 241. 1919.

Low woods. Circumneutral. Southeastern Mo.: Dunklin Co.

*Fraxinus pennsylvanica* Marsh. Red Ash.

Woods along streams, and borders of lakes and ponds. Circumneutral. Northern and central Mo., scattered: Scotland, Adair, Marion, St. Louis, Saline, Atchison, and Jackson counties.

*Fraxinus pennsylvanica* var. *lanceolata* (Borkh.) Sarg. Green Ash.

Low woods, swamps, and borders of streams. Circumneutral. General, and probably in every county.

**Fraxinus profunda** Bush. Pumpkin Ash.

Low wet woods and swamps. Circumneutral. Southeastern Mo.: Cape Girardeau, Mississippi, New Madrid, Pemiscot, Dunklin, Stoddard, Butler, and Ripley counties.

**Fraxinus profunda** var. **Ashel** Palmer, Jour. Arnold Arb. 13: 417-418. 1932.

Occasionally found with the typical form. Dunklin Co.

**Fraxinus quadrangulata** Michx. Blue Ash.

Bluffs, glades, rocky upland woods, and rarely in alluvial ground along streams. Calciphile to circumneutral. Eastern, central, and southern Mo. and locally north to Livingston Co.: Marion, Ralls, Pike, Monroe, Randolph, Livingston, Saline, Howard, Cooper, Boone, St. Charles, St. Louis, Franklin, Jefferson, Crawford, Washington, Iron, Madison, Bollinger, Mississippi, Butler, Oregon, Dent, Shannon, Texas, Phelps, Laclede, Miller, Benton, Hickory, Dallas, Howell, Ozark, Greene, Christian, Taney, Stone, Barry, Jasper, and McDonald counties.

**Fraxinus biltmoreana** Beadle.

Woods and hillsides. Circumneutral. Southeastern Mo.: Dunklin Co.

**Forestiera acuminata** (Michx.) Poir. Swamp Privet.

Swamps, low woods, and borders of streams and bayous. Circumneutral. Eastern and southern Mo., mainly along the Mississippi and White River: Marion, Pike, Lincoln, St. Charles, St. Louis, Jefferson, Ste. Genevieve, Perry, Mississippi, New Madrid, Stoddard, Dunklin, Pemiscot, Butler, Taney, Stone, and Jasper counties.

**Chionanthus virginica** L. Old Man's Beard, Fringe Tree.

Low open woods and along bluffs. Circumneutral to oxylophile. Southern Mo., scattered and rare: Mississippi and Ozark counties.

## Fam. LOGANIACEAE

**Spigelia marilandica** L. Pink-root.

Low open woods and moist thickets. Circumneutral to oxylophile. Southeastern Mo.: St. Francois, Cape Girardeau, Dunklin, Butler, Ripley, and Oregon counties.

**Polypremum procumbens** L.

Sandy open ground. Oxylophile. Southeastern Mo.: Mississippi and Dunklin counties.

## Fam. GENTIANACEAE

**Sabatia campestris** Nutt. Prairie Pink.

Prairies, fields, and glades. Circumneutral to calciphile. Central and southern Mo., scattered: Boone, Montgomery, Dent, Shannon, Greene, Clay, Jackson, Vernon, Jasper, and Newton counties.

**Sabatia angularis** (L.) Pursh. Rose Pink.

Rocky open woods, thickets, and glades. Circumneutral to calciphile. Eastern, central, and southern Mo.: Shelby, Randolph, Boone, Callaway, Montgomery, Lincoln, St. Charles, St. Louis, Jefferson, Franklin, Gasconade, Ste.



Genevieve, Perry, Bollinger, Stoddard, New Madrid, Dunklin, Butler, Ripley, Oregon, Shannon, Howell, Texas, Phelps, Pulaski, Laclede, Camden, Miller, Cole, Polk, Greene, Taney, Stone, Barry, Vernon, Jasper, Newton, and McDonald counties.

*Centaureum texense* (Griseb.) Fernald. Centaury.

Glades and bald knobs. Calciphile. Central and southwestern Mo.: Miller, Greene, Christian, Taney, and Barry counties.

*Centaureum calycosum* (Buckley) Fernald.

Introduced along railways. Jackson Co.

*Gentiana quinquefolia* L. var. *occidentalis* (Gray) Hitchc. Ague Weed.

Rocky wooded banks and bluffs of streams. Oxylophile to circumneutral. Eastern Mo.: Clark, Adair, Jefferson, Ste. Genevieve, Iron, Reynolds, Carter, and Shannon counties. This has been confused with the typical form which is not known to occur in Mo.

*Gentiana puberula* Michx. Purple Gentian.

Prairies and glades. Circumneutral to calciphile. General, but not common: Schuyler, Adair, Macon, Randolph, Shelby, Marion, Monroe, Ralls, Pike, Audrain, St. Louis, Crawford, Shannon, Phelps, Maries, Pulaski, Wright, Webster, Greene, Taney, Lawrence, Barry, Daviess, Saline, Randolph, Jackson, Cass. Hickory, Cedar, Jasper, and McDonald counties.

*Gentiana Andrewsii* Griseb. Closed Gentian.

Wet open woods, and borders of ponds and streams. Circumneutral. Scattered: St. Louis, Ste. Genevieve, Dent, Boone, Jackson, and Jasper counties.

*Gentiana clausa* Raf. See Rh. 19: 149. 1917. Closed Gentian.

Prairie swales, moist banks, and low ground along streams. Circumneutral. General but scattered: Schuyler, Adair, Macon, Osage, Iron, Butler, Oregon, Texas, Douglas, Saline, Jackson, Cass, and Polk counties. This has sometimes been confused with the last species and with *Gentiana Saponaria*.

*Gentiana flavida* Raf. Pale Gentian.

Rocky prairies, thickets, and glades. Circumneutral. General but scattered: Schuyler, Sullivan, Ralls, Warren, St. Louis, Franklin, Scott, Shannon, Texas, Phelps, Maries, Morgan, Jackson, Cass, Greene, Taney, Stone, Barry, Jasper, and Newton counties.

*Frasera carolinensis* Walt. American Columbo.

Rocky open woods and thickets. Oxylophile. Southeastern Mo., mostly in the eastern Ozark region: Maries, Jefferson, Ste. Genevieve, St. Francois, Bollinger, Washington, Madison, Wayne, Iron, and Scott counties.

*NYMPHOIDES FELTATUM* (S. P. Gmel.) Britten & Rendle. Floating Heart.

Introduced in ponds. Scattered: St. Louis, Iron, and Newton counties.

## Fam. APOCYNACEAE

*Amsonia Tabernaemontana* Walt.

Rich woods and thickets. Circumneutral to oxylophile. East-central and southern Mo.: St. Louis, Jefferson, Franklin, Polk, Greene, Webster, Douglas, Taney, Stone, Lawrence, Barry, Jasper, Newton, and McDonald counties.

**Amsonia Tabernaemontana** var. *salicifolia* Woodson, Ann. Mo. Bot. Gard. 15: 406. 1928.

Alluvial thickets and rich ground along bluffs. Circumneutral. Scattered: Pike, St. Louis, Jefferson, Dent, Ripley, Greene, Christian, and McDonald counties.

**Amsonia Tabernaemontana** var. *Gattingeri* Woodson, Ann. Mo. Bot. Gard. 15: 408. 1928.

Rich open woods along bluffs and streams. Circumneutral. East-central and southern Mo.: Lincoln, St. Louis, Lawrence, and Jasper counties.

**Amsonia illustris** Woodson, Ann. Mo. Bot. Gard. 16: 407. 1929.

Rocky open ground and gravel bars of streams. Circumneutral. Central and southern Mo.: Lincoln, St. Louis, Franklin, Jefferson, Crawford, Carter, Ripley, Oregon, Dent, Shannon, Osage, Miller, Phelps, Maries, Pulaski, Laclede, Hickory, Dallas, Stone, Jasper, Newton, and McDonald counties.

**Amsonia ciliata** Walt. var. *tenuifolia* (Raf.) Woodson, Ann. Mo. Bot. Gard. 15: 400. 1928.

Glades and bald knobs. Circumneutral to calciphile. Southern Mo.: Douglas and Ozark counties.

**Trachelospermum difforme** (Walt.) Gray.

Swamps and borders of bayous. Circumneutral. Southeastern Mo.: Stoddard, Dunklin, Butler, and Ripley counties, and also in St. Louis Co.

**Apocynum androsaemifolium** L. Pink-flowered Dogbane.

*Apocynum sylvaticum* Greene.

Thickets and dry rocky woods. Circumneutral to oxylophile. General but scattered: Mercer, Putnam, Sullivan, Adair, St. Louis, Jefferson, Iron, Shannon, Howell, Boone, Miller, Morgan, Dallas, Wright, Douglas, Webster, Greene, Lawrence, Barry, and Jasper counties.

**Apocynum cannabinum** L. Indian Hemp, Dogbane.

Rocky prairies, open woods, and glades. Circumneutral. East-central and southern Mo., scattered: St. Louis, Iron, Oregon, Phelps, Stone, and McDonald counties.

**Apocynum cannabinum** var. *glaberrimum* A. DC.

Rocky open woods, thickets, and waste ground. Circumneutral. General.

**Apocynum cannabinum** var. *pubescens* (Mitchell) A. DC.

Rocky open woods, thickets, and waste ground. Circumneutral. General.

**Apocynum medium** Greene.

Rocky open woods and thickets. Circumneutral to oxylophile. General.

**Apocynum medium** var. *leuconeuron* (Greene) Woodson, Ann. Mo. Bot. Gard. 17: 112. 1930.

Similar situations to the preceding. Circumneutral to oxylophile. General but scattered.

**Apocynum hypericifolium** Ait.

*Apocynum cannabinum* var. *hypericifolium* (Ait.) Gray (G).

Rocky stream beds and alluvial soil. Circumneutral to calciphile. Northern and central Mo., and locally south in Texas Co.: Mercer, Boone, St. Charles, St. Louis, Andrew, Carroll, Jackson, and Texas counties.

*Apocynum hypericifolium* var. *cordigerum* (Greene) Beg. & Bel. Atti R. Accad. Lincei, V. 9: 114. 1913.

In similar situations to the typical form. Circumneutral to calciphile. Northern and central Mo., scattered: Scotland, Dekalb, Livingston, Macon, and Jackson counties.

VINCA MINOR L. Periwinkle.

Cultivated and occasionally escaped. Indifferent. Scattered: Marion, St. Charles, St. Louis, Jefferson, Scott, Texas, and Clay counties.

### Fam. ASCLEPIADACEAE

*Asclepiodora viridis* (Walt.) Gray.

Rocky prairies and glades. Calciphile to circumneutral. Central and southern Mo.: St. Louis, Jefferson, Washington, St. Francois, Ste. Genevieve, Bollinger, Butler, Ripley, Oregon, Carter, Shannon, Phelps, Miller, Douglas, Wright, Ozark, Taney, Stone, Barry, Vernon, Barton, Jasper, Newton, and McDonald counties.

*Asclepias tuberosa* L. Butterfly-weed.

Rocky open woods, prairies, and glades. Circumneutral. General.

*Asclepias tuberosa* f. *lutea* Clute, Am. Bot. 18: 73. 1912.

Occasionally found with the typical form. Jefferson Co.

*Asclepias purpurascens* L. Purple Milkweed.

Rocky open woods, thickets, and glades. Circumneutral. General. This has sometimes been confused with *Asclepias exaltata* (*A. phytolaccoides*) which is not known to occur in Mo.

*Asclepias incarnata* L. Swamp Milkweed.

Low wet woods, and borders of ponds, sloughs, and prairie streams. Circumneutral. General.

*Asclepias speciosa* Torr.

Open ground. Circumneutral. Local: St. Louis Co.

*Asclepias syriaca* L. var. *kansana* (Vail) Palmer & Steyermark, comb. nov.

*Asclepias kansana* Vail (B & B).

*Asclepias syriaca* of auth., in part (G), (B & B).

Open woods, fields, and waste ground. Circumneutral. General and common.

Typical *Asclepias syriaca* with few and short prickles on the seed pods is more eastern and has not been found in Mo.

*Asclepias sullivantii* Engelm.

Prairies and thickets. Circumneutral. Northern and central Mo.: Scotland, Schuyler, Gentry, Linn, Livingston, Chariton, Randolph, Lincoln, St. Charles, St. Louis, Atchison, Dekalb, Jackson, and Henry counties.

*Asclepias humistriata* Walt.

*Asclepias amplexicaulis* Michx., not Sm. (G), (B & B).

Rocky open woods, prairies, and glades. Circumneutral. Central and southern Mo., scattered: St. Louis, Scott, Mississippi, Shannon, Dent, Jackson, Greene, and Jasper counties.

***Asclepias Meadii* Torr.**

Dry open woods and prairies. Circumneutral. Central and southern Mo., scattered: St. Louis, Iron, and Cass counties.

***Asclepias variegata* L.**

Sandy open ground and dry rocky woods. Oxylophile to circumneutral. Southeastern Mo.: Scott, Dunklin, and Ripley counties.

***Asclepias latifolia* (Torr.) Raf.**

*Asclepias Jamesii* Torr.

Prairies. Introduced in Jackson Co. Sometimes confused with *Asclepias humistriata* which it resembles.

***Asclepias quadrifolia* Jacq.**

Rocky open woods. Oxylophile to circumneutral. Eastern, middle, and southern Mo.: Schuyler, Marion, Ralls, Monroe, Pike, Boone, Callaway, Cole, St. Louis, Jefferson, Franklin, St. Francois, Bollinger, Wayne, Iron, Madison, Ripley, Shannon, Texas, Phelps, Maries, Wright, Greene, Christian, Taney, Stone, Lawrence, Barry, Jasper, Newton, and McDonald counties.

***Asclepias perennis* Walt.**

Low wet woods and borders of bayous. Circumneutral. Southeastern Mo.: Mississippi, New Madrid, Pemiscot, Dunklin, Stoddard, Butler, and Ripley counties.

***Asclepias verticillata* L. Whorled Milkweed.**

Dry prairies, glades, and rocky bluffs. Circumneutral to oxylophile. General, but commonest in northern and central Mo.

***Asclepias stenophylla* Gray.**

*Acerates angustifolia* (Nutt.) Dene. (B & B).

Dry prairies, glades, and rocky bluffs. Calciphile to circumneutral. General but scattered: Pike, Lincoln, St. Charles, Jefferson, Pulaaski, Hickory, Dallas, Ozark, Greene, Stone, Barry, Jackson, and Jasper counties.

***Acerates hirtella* Pennell, Bull. Torr. Bot. Club 46: 184-185. 1919.**

*Acerates floridana* of auth., not *Asclepias floridana* Lam. (G), (B & B).

Rocky prairies and glades. Circumneutral to oxylophile. General.

***Acerates viridiflora* Ell. Green Milkweed.**

Rocky prairies and glades. Circumneutral. General.

***Acerates viridiflora* var. *lanceolata* (Ives) Gray.**

In similar situations to the preceding. Circumneutral. General but scattered: Boone, Callaway, St. Louis, Jefferson, Washington, Phelps, Howell, Pettis, Cedar, Atchison, Jackson, Jasper, and McDonald counties.

***Acerates viridiflora* var. *linearis* Gray.**

Sometimes found with the typical form. Scattered: Ste. Genevieve, Pulaaski, Saline, Atchison, Holt, Buchanan, and Greene counties.

***Gonolobus laevis* Michx. Angle-pod, Sand Vine.**

Moist alluvial woods, thickets, and cultivated fields. Circumneutral to oxylophile. General.

***Vincetoxicum gonocarpos* Walt.**

Rocky woods and thickets along streams. Circumneutral. Southern Mo.: Mississippi, Dunklin, Ripley, Ozark, Barry, and Jasper counties.

*Vincetoxicum obliquum* (Jacq.) Britton.

Rocky woods and thickets. Circumneutral. Eastern Mo., south of the Missouri River: St. Louis, Madison, and Shannon counties.

*Vincetoxicum carolinense* (Jacq.) Britton. Climbing Milkweed.

Rocky open woods, thickets, and glades. Circumneutral to oxylophile. Central and southern Mo.: Warren, St. Louis, Jefferson, Franklin, St. Francois, Washington, Ste. Genevieve, Wayne, Carter, Ripley, Shannon, Dent, Phelps, Miller, Howell, Douglas, Wright, Benton, Greene, Barry, Jasper, and Newton counties.

*Vincetoxicum Baldwinianum* (Sweet) Britton.

Open woods and thickets along streama. Circumneutral. Southern Mo.: Phelps, Shannon, Taney, Stone, Lawrence, Barry, Jasper, Newton, and McDonald counties.

## Fam. CONVULVULACEAE

*Evolvulus argenteus* Pursh.

Glades and bald knobs. Calciphile to circumneutral. East-central and southern Mo.: Montgomery, St. Louis, Jefferson, Franklin, Washington, Ripley, Oregon, Shannon, Douglas, Ozark, Taney, Greene, Stone, and Barry counties.

*Evolvulus alsinoides* L.

Rocky open ground. Local: St. Louis Co. Probably introduced.

*Ipomoea coccinea* L. Red Morning Glory.

Fields, banks of streams, and waste ground. Indifferent. Scattered: Monroe, Boone, Cole, St. Louis, Scott, Reynolds, Greene, Jackson, and Jasper counties.

*Ipomoea quamoclit* L. Cypress Vine.

Cultivated and rarely escaped into waste ground. Greene Co.

*Ipomoea pandurata* (L.) G. F. W. Mey. Man-of-the-earth.

Fields, thickets, and waste ground. Circumneutral. General: St. Louis, Franklin, Jefferson, Morgan, Benton, Greene, and Jasper counties.

*Ipomoea pandurata* var. *rubescens* Choisy. See Rh. 20: 65. 1918.

Similar situations to the preceding. Circumneutral. General. This is the common form in Missouri.

*Ipomoea lacunosa* L. Small White Morning Glory, Bindweed.

Thickets, roadsides, waste ground, and alluvial soils along streams and sloughs. Circumneutral. General: Linn, Boone, Lincoln, St. Charles, St. Louis, Jefferson, Madison, Scott, Mississippi, New Madrid, Pemiscot, Osage, Clay, Andrew, Jackson, Cass, Johnson, Vernon, Greene, Jasper, and Newton counties.

*Ipomoea purpurea* (L.) Roth. Common Morning Glory.

Cultivated fields and waste ground. Indifferent. General, and probably in every county.

*Ipomoea hederacea* Jacq. Blue Morning Glory.

Cultivated fields and waste ground. Indifferent. General, and probably in every county.

*Convolvulus spithameus* L. Dwarf Morning Glory.

Rocky open woods and banks. Circumneutral. Eastern and central Mo.: Clark, St. Louis, Washington, Iron, and Jackson counties.

***Convolvulus sepium* L.** Hedge Bindweed.

Fields, roadsides, and waste ground. Indifferent. General.

***Convolvulus sepium* var. *pubescens* (Gray) Fernald.**

In similar situations to the preceding. Scattered: Schuyler, Scotland, Marion, Ralls, Monroe, St. Louis, Clay, Jackson, and Jasper counties.

***Convolvulus sepium* var. *fraterniflorus* Mack. & Bush.**

Waste and cultivated ground. Indifferent. Central and southern Mo.: St. Louis, Jefferson, Osage, Jackson, Cass, and Jasper counties.

***CONVOLVULUS ARVENSIS* L.** Small Bindweed.

Open banks, roadsides, and waste ground. Circumneutral. General.

***CONVOLVULUS ARVENSIS* var. *OBTUSIFOLIUS* Choisy.**

Occasionally found with the typical form. Scattered: Schuyler, St. Louis, Washington, Iron, and Jackson counties.

***CONVOLVULUS JAPONICUS* Thunb.** Japanese Morning Glory, German Rose.

Roadsides and waste ground about dwellings. Escaped from cultivation. Scattered: St. Louis, Platte, Jackson, and Johnson counties.

***Cuscuta Polygonorum* Engelm.** Smartweed Dodder.*Cuscuta obtusifolia* HBK. (G).Moist ground along streams and ponds, prairies, and thickets; on species of *Polygonum* and other herbs. General.***Cuscuta pentagona* Engelm.** See Univ. Ill. Biol. Monogr. 6<sup>2-3</sup>: 50. 1921. Field Dodder.*Cuscuta arvensis* Beyrich (G), (B & B).

Thickets, prairies, and glades; on various herbs, especially Compositae. General.

***Cuscuta pentagona* var. *calycina* Engelm.**

Occasionally found with the typical form. Jackson Co.

***Cuscuta Cephalanthi* Engelm.**

Moist ground, thickets, and low woods; on various herbs and shrubs. General.

***Cuscuta Coryli* Engelm.** Hazel Dodder.

Thickets and open ground, on herbs and shrubs, often on hazel. General but scattered: Knox, Montgomery, St. Louis, Gasconade, Jackson, Polk, Stone, Barry, Jasper, and McDonald counties.

***Cuscuta Gronovii* Willd. var. *vulgivaga* Engelm.** See Univ. Ill. Biol. Monogr. 6<sup>2-3</sup>: 65. 121. 1921. Love-vine, Dodder.*Cuscuta Gronovii* of auth., in part, not Willd. (G), (B & B).

Moist ground, thickets and prairies; on various herbs and shrubs. General.

***Cuscuta cuspidata* Engelm.**Low open woods, and borders of prairie streams; on *Ambrosia* and various other herbs and shrubs. Central and southern Mo.: St. Louis, Jefferson, Iron, Wayne, Dunklin, Greene, Jackson, and Jasper counties.***Cuscuta glomerata* Choisy.**

Wet ground, prairie swales, and along small streams; on Compositae and other tall herbs. General.



*Cuscuta compacta* Juss.

Wet ground, low open woods and thickets; usually on shrubs. Eastern and southern Mo., south of the Missouri River: St. Louis, Jefferson, Franklin, Scott, New Madrid, Iron, Reynolds, Carter, Shannon, Howell, and Douglas counties.

## Fam. POLEMONIACEAE

*Phlox amplifolia* Britton. See *Bartonia* 15: 15. 1933.

Rocky wooded hillsides. Circumneutral. Eastern Mo., south of the Missouri River: St. Louis and Reynolds counties.

*Phlox paniculata* L.

Moist woods and thickets, and gravel bars and banks along streams. Circumneutral. Central and southern Mo. south and east of a line from St. Louis, Warren, Montgomery, Cole, Camden, and Hickory to Vernon Co., and also locally north in Marion, Jackson, and Holt counties.

*Phlox maculata* L. var. *odorata* (Sweet) Wherry, *Bartonia* 14: 26. 1932. Wild Sweet William.

Rich moist woods. Circumneutral. Southeastern Mo., local: Iron Co.

*Phlox glaberrima* L. var. *melampyrifolia* (Salisb.) Wherry, *Bartonia* 14: 19. 1932.

Prairies and open woods. Circumneutral. Southeastern Mo.: Bollinger, Scott, Dunklin, Butler, Wayne, Iron, and Ripley counties.

*Phlox glaberrima* var. *interior* Wherry, *Bartonia* 14: 19. 1932.

Low open ground. Circumneutral. East-central Mo.: St. Louis and Jefferson counties.

*Phlox pilosa* L. var. *virens* (Michx.) Wherry, *Bartonia* 12: 47. 1931.

Rocky open woods, thickets, and prairies. Circumneutral to oxylophile. Eastern, central, and southern Mo., commonest in the Ozark region.

*Phlox pilosa* var. *fulgida* Wherry, *Bartonia* 12: 47. 1931.

Rocky open woods, thickets, and prairies. Circumneutral to oxylophile. Northern and western Mo.: Lewis, Marion, Ralls, Monroe, Shelby, Randolph, Macon, Adair, Putnam, Mercer, Daviess, Nodaway, Atchison, Platte, Jackson, Cass, and Vernon counties.

*Phlox pilosa* var. *fulgida* f. *albiflora* (MacM.) Standley, *Rh.* 34: 176. 1932.

Occasionally found with the typical form. Scattered: Shelby, Adair, Marion, Randolph, Macon, and Putnam counties.

*Phlox pilosa* var. *ozarkana* Wherry, *Am. Midl. Nat.* 16: 413-416. 1935.

Open rocky woods. Oxylophile to circumneutral. Southern and east-central Mo.: St. Louis, Jefferson, Iron, Carter, Wayne, Shannon, Texas, Christian, Wright, Barry, and McDonald counties.

*Phlox divaricata* L. var. *Laphamii* Wood. Blue Phlox, Wild Sweet William.

Rich or rocky woods and thickets. Circumneutral. General.

*Phlox bifida* Beck.

*Phlox stellata* Gray (G), (B & B), in part.

Rocky woods and open banks. Oxylophile to circumneutral. Scattered in southern Mo., and locally north in Randolph Co.: Randolph, Madison, Iron, Reynolds, Douglas, and Taney counties.

**Phlox Drummondii** Hook.

Introduced along railway. Southeastern Mo., local: Dunklin Co.

**Gilia rubra** (L.) Heller. Standing Cypress.

Plains and waste ground. Calciphile to circumneutral. Cultivated and escaped, except in northeastern Mo., where possibly native. Scattered: Clark, Holt, and Greene counties.

**Collomia linearis** Nutt. See Rh. 23: 288. 1921.

*Gilia linearis* (Nutt.) Gray (G).

Meadows and along bluffs. Circumneutral. Northeastern Mo., local: Marion Co.

**Polemonium reptans** L. Jacob's Ladder, Greek Valerian.

Rich alluvial or rocky woods and thickets. Circumneutral. General.

## Fam. HYDROPHYLLACEAE

**Hydrophyllum canadense** L. Waterleaf.

Rich woods and moist shaded hillsides. Circumneutral. Eastern Mo.: Warren, Franklin, St. Louis, Jefferson, and Stoddard counties.

**Hydrophyllum virginianum** L.

Rich moist woods and thickets and alluvial ground along streams. Circumneutral. General.

**Hydrophyllum appendiculatum** Michx. Woollen Breeches.

Rich woods and thickets. Circumneutral to calciphile. General but scattered: Schuyler, Adair, Macon, Lewis, Marion, Ralls, Pike, Randolph, Boone, Callaway, Warren, St. Charles, St. Louis, Jefferson, Franklin, Washington, St. Francois, Ste. Genevieve, Perry, Stoddard, Wayne, Dent, Reynolds, Oregon, Phelps, Pulaski, Cole, Camden, Laclede, Dallas, Morgan, Greene, Stone, Barry, Grundy, Platte, Clay, Jackson, Lafayette, and Cass counties.

**Nemophila microcalyx** (Nutt.) Fisch. & Mey.

Moist open woods. Circumneutral. Southeastern Mo.: Dunklin and Butler counties.

**Ellisia Nyctelea** L.

Moist woods, thickets, alluvial soils, and cultivated or waste ground. Circumneutral. General but scattered: Mercer, Schuyler, Shelby, Marion, Randolph, Boone, Cooper, Cole, Lincoln, St. Louis, Jefferson, Franklin, Wayne, Shannon, Phelps, Pulaski, Laclede, Texas, Howell, Saline, Grundy, Daviess, Platte, Clay, Jackson, Cass, Henry, Polk, Greene, Barry, Jasper, and McDonald counties.

**Phacelia bipinnatifida** Michx.

Rich rocky woods and banks. Circumneutral. Eastern and middle Mo., south of the Missouri River: St. Louis, Jefferson, Crawford, Shannon, Carter, Phelps, Pulaski, and Texas counties.

**Phacelia Purshii** Buckley. Miami Mist.

Moist open woods, alluvial thickets, and along rocky banks, bluffs, and open places. Circumneutral to calciphile. Eastern and middle Mo. and scattered southwestward, mostly south of the Missouri River: Boone, Callaway, Cole, Montgomery, Warren, Lincoln, St. Louis, Jefferson, Franklin, Washington, St. Francois, Ste. Genevieve, Madison, Bollinger, Iron, Wayne, Reynolds, Carter,

Ripley, Shannon, Gasconade, Maries, Osage, Crawford, Dent, Oregon, Phelps, Pulaski, Ozark, Miller, Camden, Laclede, and Cedar counties, and also introduced in Jackson Co.

*Phacelia hirsuta* Nutt.

Rocky prairies, glades, ledges along bluffs, low rich woods, and alluvial ground along streams. Calciphile to circumneutral. Southern Mo.: Shannon, Oregon, Douglas, Wright, Webster, Ozark, Greene, Stone, Lawrence, Barry, Jasper, Newton, and McDonald counties. This has frequently been confused with *Phacelia dubia*, an eastern species not known in Missouri.

*Hydrolea ovata* Nutt.

Swamps and bayous. Circumneutral to oxylophile. Southeastern Mo.: Dunklin and Butler counties.

*Hydrolea affinis* Gray.

Swampy woods, sloughs, and bayous. Circumneutral to oxylophile. Southeastern Mo.: Cape Girardeau, Bollinger, Stoddard, New Madrid, Dunklin, Butler, and Ripley counties.

### Fam. BORAGINACEAE

*Heliotropium tenellum* (Nutt.) Torr.

Rocky prairies and glades. Calciphile to circumneutral. Eastern, central, and southern Mo., mostly in the Ozark region: Ralls, Montgomery, St. Charles, St. Louis, Jefferson, Franklin, Washington, St. Francois, Ste. Genevieve, Iron, Reynolds, Ripley, Shannon, Dent, Osage, Maries, Phelps, Pulaski, Camden, Laclede, Wright, Douglas, Ozark, Taney, Stone, Greene, Polk, Hickory, Dallas, Barry, Jasper, and McDonald counties.

*HELIOTROPIMUM INDICUM* L. Indian Heliotrope.

Low moist alluvial woods and waste ground. Central and southern Mo.: Lincoln, St. Charles, St. Louis, Jefferson, Perry, Cape Girardeau, Bollinger, Scott, Mississippi, New Madrid, Pemiscot, Dunklin, Butler, Ripley, Oregon, Shannon, Reynolds, Gasconade, Osage, Maries, Jackson, Henry, Greene, Taney, Stone, Barry, and McDonald counties.

*CYNOGLOSSUM OFFICINALE* L. Hound's Tongue.

Fields and rocky waste ground. Circumneutral to oxylophile. Central and southern Mo.: Ralls, Pike, Lincoln, Warren, St. Louis, Jefferson, Washington, St. Francois, Madison, Dent, Carter, Iron, Reynolds, Shannon, Oregon, Boone, Jackson, Greene, and Taney counties.

*Cynoglossum virginianum* L. Wild Comfrey.

Rich or rocky woods and alluvial thickets. Circumneutral. Central and southern Mo.: Boone, Cole, Warren, St. Louis, Jefferson, Franklin, Washington, St. Francois, Ste. Genevieve, Cape Girardeau, Bollinger, Madison, Wayne, Iron, Reynolds, Dunklin, Ripley, Oregon, Dent, Osage, Greene, Shannon, and Barry counties.

*Lappula virginiana* (L.) Greene. Beggar's Lice.

Open woods, thickets, and waste ground. Circumneutral. General.

*Lappula Bedowskii* (Hornem.) Greene var. *occidentalis* (Wats.) Rydb.

Waste ground along railroads. Introduced from farther west. Jackson Co.

**LAPPULA ECHINATA** Gilib. Stickseed.

Waste and cultivated ground. Indifferent. General but scattered: Marion, St. Louis, St. Francois, Iron, Dent, Atchison, Jackson, and Barry counties.

**Amsinckia lycopsoides** Lehm.

Introduced along railroads. Jackson Co.

**SYMPHYTUM OFFICINALE** L. Comfrey.

Waste ground and along railways. Escaped from cultivation. Washington and Jackson counties.

**Myosotis virginica** (L.) BSP. Scorpion Grass.

Open woods, prairies, and waste ground. Circumneutral. General.

**Myosotis virginica** var. **macrosperma** (Engelm.) Fernald.

In similar situations to the typical form. Southern Mo., scattered: Dunklin, Shannon, and Jasper counties.

**MYOSOTIS SCIRPOIDES** L. Forget-me-not.

Shaded ground along spring branch. Introduced in St. Louis Co.

**Mertensia virginica** L. Bluebells, Virginia Cowslip.

Moist rich woods and slopes, sometimes on low rocky slopes and bluffs, usually in alluvial soils. Circumneutral to calciphile. General: Knox, Adair, Marion, Pike, Audrain, Callaway, Warren, St. Louis, Jefferson, Franklin, St. Francois, Madison, Wayne, Washington, Bollinger, Texas, Pulaski, Miller, Daviess, Sullivan, Grundy, Clay, Jackson, Johnson, Laclede, Greene, Christian, Taney, and Stone counties.

**LITHOSPERMUM ARVENSE** L. Corn Gromwell.

Fields, waste ground, and along roadsides and railroads. Indifferent. General.

**Lithospermum latifolium** Michx.

Rich woods and thickets. Circumneutral. Scattered: St. Louis and Jackson counties.

**Lithospermum carolinense** (Walt.) MacM. See Rh. 17: 131. 1915.

*Lithospermum Gmelini* (Michx.) Hitchc. (G).

Prairies and thickets. Oxylophile. Northern and east-central Mo., scattered: St. Louis, Jefferson, and Nodaway counties.

**Lithospermum canescens** (Michx.) Lehm. Orange Puccoon.

Rocky open woods, glades, and prairies. Calciphile to circumneutral. General, but commonest in the Ozark region.

**Lithospermum angustifolium** Michx. Yellow Puccoon.

Dry open woods, glades, and prairies. Calciphile to circumneutral. General but scattered: Clark, Boone, St. Louis, Jefferson, Washington, Iron, Dent, Shannon, Pemiscot, Miller, Camden, Randolph, Atchison, Holt, Buchanan, Clay, Jackson, Cass, Carroll, Pettis, Cedar, Greene, Stone, Vernon, Jasper, and Newton counties.

**Onosmodium occidentale** Mack. False Gromwell.

Rocky prairies, glades, thickets, and loess hills. Circumneutral. General.

**Onosmodium occidentale** var. **sylvestre** Mack.

Open woods and thickets. Circumneutral. Scattered: St. Louis and Jackson counties.

***Onosmodium hispidissimum* Mack.**

Dry rocky prairies, thickets, and glades. Circumneutral. Central and western Mo.: St. Louis, Jefferson, Franklin, Randolph, Boone, Holt, Clay, Jackson, and Jasper counties.

***Onosmodium hispidissimum* var. *macrospermum* Mack. & Bush.**

Rich woods and moist prairies. Circumneutral. Western Mo., local: Jackson Co.

***Onosmodium subsetosum* Mack. & Bush.**

Dry rocky prairies, thickets, and glades. Circumneutral to calciphile. Central and southern Mo.: Boone, St. Louis, Jefferson, Washington, St. Francois, Ste. Genevieve, Dent, Shannon, Texas, Phelps, Miller, Camden, Greene, Christian, Douglas, Ozark, Stone, Barry, and Jasper counties.

***ECHINUM VULGARE* L. Blue-weed.**

Waste ground, gravel bars, and roadsides. Calciphile. Scattered: Marion, Ralls, St. Louis, Jefferson, St. Francois, Reynolds, Shannon, Clay, and Jackson counties.

## Fam. VERBENACEAE

***Verbena urticifolia* L. White Vervain.**

Fields, roadsides, and waste ground. Indifferent. General.

***Verbena simplex* Lehm. See Ann. Mo. Bot. Gard. 20: 282. 1933.**

*Verbena angustifolia* Michx., not Mill. (G), (B & B).

Prairies, fields, and glades. Calciphile to circumneutral. Eastern, central, and southern Mo., south and east of a line drawn from Marion and Boone counties to Jackson Co.

***Verbena hastata* L. Blue Vervain.**

Low open woods, wet prairies, fields, and waste ground. Circumneutral. General, but commonest in northern and central Mo.

***Verbena stricta* Vent.**

Prairies, thickets, glades, and waste ground. Circumneutral. General.

***Verbena bracteata* Lag. & Rodr. See Ann. Mo. Bot. Gard. 20: 304. 1933.**

*Verbena bracteosa* Michx. (G), (B & B).

Fields, roadsides, and waste ground. Circumneutral. General.

***Verbena bipinnatifida* Nutt.**

Along railroads and in waste ground. Introduced from farther west. Jackson Co.

***Verbena canadensis* (L.) Britton. Wild Verbena.**

Prairies, fields, glades, and rocky slopes. Calciphile to circumneutral. General, but commonest in central and southern Mo.

***Verbena simplex* × *stricta*.**

Occasionally found with the parent species. St. Louis, Jefferson, Franklin, Phelps, Greene, Barry, and Jasper counties.

***Verbena bracteata* × *stricta***

Occasionally found with the parent species. Jasper Co.

*Lippia lanceolata* Michx. var. *recognita* Fernald & Griscom, Rh. 37: 178. 1935.  
Fog-fruit.

Prairie swales, ditches, and borders of ponds and streams. Circumneutral to calciphile. General. Typical *Lippia lanceolata* is found along the coastal plain and does not reach Missouri.

*Lippia nodiflora* (L.) Michx.

Low swampy woods. Circumneutral. Southeastern Mo., local: Dunklin Co.

#### FAM. LABIATAE

*Teucrium canadense* L. var. *virginicum* (L.) Eat. See Rh. 35: 395. 1933.

*Teucrium canadense* of auth., not L. (G), (B & B).

Thickets, fields, and waste ground. Circumneutral. General.

*Teucrium occidentale* Gray.

Prairies. Circumneutral. Western Mo., local: Jackson Co. Perhaps introduced.

*Isanthus brachiatus* (L.) BSP. False Pennyroyal.

Rocky banks, prairies, and glades. Circumneutral to calciphile. General but scattered: Clark, Macon, Boone, Montgomery, St. Charles, St. Louis, Crawford, St. Francois, Bollinger, Reynolds, Shannon, Oregon, Texas, Dent, Ozark, Pulaski, Laclede, Dallas, Jackson, Barry, Jasper, Newton, and McDonald counties.

*Trichostema dichotomum* L. Blue Curls.

Rocky open woods and glades. Oxylophile. Eastern and middle Mo., mostly in the eastern Ozark region: Montgomery, St. Louis, Jefferson, Ste. Genevieve, St. Francois, Iron, Wayne, Dunklin, Reynolds, Crawford, Phelps, Shannon, Texas, and Howell counties.

*Scutellaria lateriflora* L. Mad-dog Skullecup.

Wet woods and borders of streams. Circumneutral. General but scattered: Marion, Boone, Lincoln, St. Charles, St. Louis, Jefferson, St. Francois, Perry, Bollinger, Mississippi, New Madrid, Pemiscot, Dunklin, Butler, Ripley, Carter, Reynolds, Iron, Pulaski, Oregon, Howell, Dallas, Greene, Taney, Atchison, Buchanan, Clay, Jackson, Cass, Jasper, and McDonald counties.

*Scutellaria lateriflora* f. *rhodantha* Fernald, Rh. 23: 86. 1921.

Occasionally found with the common form of the species.

*Scutellaria ovata* Hill. See Contr. U. S. Nat. Herb. 22: 734. 1927.

*Scutellaria versicolor* Nutt. (G).

*Scutellaria cordifolia* Muhl. (B & B).

Rocky open woods, bluffs, and glades. Calciphile to circumneutral. General.

*Scutellaria ovata* var. *pilosior* (Benth.) Leonard, Contr. U. S. Nat. Herb. 22: 735. 1927.

*Scutellaria versicolor* var. *minor* Chapm.

Rocky bluffs and ledges. Central and southern Mo.: St. Louis, Iron, Maries, Phelps, Pulaski, Laclede, Ozark, Taney, and Barry counties.

*Scutellaria ovata* var. *bracteata* (Benth.) Blake, Rh. 17: 134. 1915; also U. S. Nat. Herb. 22<sup>nd</sup>: 735. 1927.

Rocky open or shaded ground. Circumneutral to calciphile. East-central and southern Mo., scattered: St. Louis and Barry counties.



*Scutellaria montana* Chapm. See Contr. U. S. Nat. Herb. 22<sup>no</sup>: 740. 1927.

Rocky open woods. Circumneutral. Southeastern Mo., local: Iron Co. This has been confused with *Scutellaria serrata*, a species not known to occur in Mo.

*Scutellaria incana* Spreng. See Contr. U. S. Nat. Herb. 22<sup>no</sup>: 743. 1927.

*Scutellaria canescens* Nutt. (G).

Rocky open woods and thickets. Circumneutral. East-central and southern Mo.: Ralls, Pike, Lincoln, Warren, St. Louis, Jefferson, St. Francois, Perry, Cape Girardeau, Iron, Wayne, Bollinger, Butler, Ripley, Oregon, Carter, Reynolds, Shannon, Texas, Dent, Maries, Phelps, Pulaski, Miller, Howell, Douglas, Hickory, Greene, Stone, Jasper, Newton, and McDonald counties.

*Scutellaria punctata* (Chapm.) Leonard.

*Scutellaria canescens* var. *punctata* Chapm.

Rocky open woods and thickets. Circumneutral. Southern Mo.: Iron, Reynolds, Texas, Douglas, Howell, and Ozark counties.

*Scutellaria ovalifolia* Pers. See Contr. U. S. Nat. Herb. 22<sup>no</sup>: 741. 1927.

*Scutellaria pilosa* Michx., not Hill (G), (B & B).

Rocky woods and bluffs. Circumneutral to oxylophile. Southern Mo.: Ste. Genevieve, Iron, Ripley, Wayne, Reynolds, Shannon, Texas, Laclede, Wright, Ozark, Stone, and Barry counties.

*Scutellaria epilobifolia* Hamilton. See Contr. U. S. Nat. Herb. 22<sup>no</sup>: 723-724. 1927; and Rh. 23: 85. 1921.

*Scutellaria galericulata* of Am. auth., not L. (G), (B & B).

Low wet woods. Circumneutral. Western Mo., local: Jackson Co.

*Scutellaria Bushii* Britton.

Glades and bald knobs. Calciphile. Southern Mo.: Carter, Dent, Shannon, Pulaski, Douglas, and Ozark counties.

*Scutellaria parvula* Michx.

Rocky prairies and glades. Circumneutral. General but commonest in the Ozark region.

*Scutellaria parvula* var. *ambigua* (Nutt.) Fernald.

Frequently found with the typical form. General but scattered, and commoner in northern and central Mo.

*Scutellaria nervosa* Pursh.

Rich moist woods and thickets. Circumneutral. Eastern and middle Mo.: Schuyler, Shelby, Boone, Lincoln, St. Charles, St. Louis, Cape Girardeau, Pemisacot, and Dunklin counties.

*MARRUBIUM VULGARE* L. Horehound.

Fields, roadsides, and waste ground, especially about old dwellings. Indifferent. General and probably in every county.

*Agastache nepetoides* (L.) Ktze. Giant Hyssop.

Thickets and borders of woods. Circumneutral. General.

*Agastache scrophulariaefolia* (Willd.) Ktze.

Thickets, open woods, and alluvial ground. Circumneutral. Northern and west-central Mo.: Scotland, Mercer, Jackson, and Cass counties.

**Agastache scrophulariaefolia** var. *mollis* (Fernald) Heller.

Similar situations to the preceding. Circumneutral. Scattered in northern and west-central Mo.: Scotland and Jackson counties.

**NEPETA CATARIA** L. Catnip.

Fields, roadsides, and waste ground about old dwellings. Indifferent. General and probably in every county.

**NEPETA HEDERACEA** (L.) Trevisan. See Rh. 23: 289. 1921. Ground Ivy, Gill-over-the-ground.

Fields, waste ground, and open banks. Planted in old gardens and freely escaping. Indifferent. Scattered in eastern Mo.: Marion, Pike, and St. Louis counties. The typical form of *Nepeta hederacea* with larger flowers is not as common in Missouri as the next following.

**NEPETA HEDERACEA** var. *PARVIFLORA* Benth. See Rh. 23: 289. 1921.

Similar situations to the preceding, and more common. Indifferent. General.

**Dracocephalum parviflorum** Nutt. Dragon Head.

Along railroads and in waste ground. Escaped from cultivation. Indifferent. Scattered: St. Louis and Jackson counties.

**PRUNELLA VULGARIS** L. Self-heal, Heal-all.

Thickets, fields, and waste ground. Circumneutral. General.

**Prunella vulgaris** var. *lanceolata* (Barton) Fernald, Rh. 15: 183. 1913.

Low woods, thickets, and along streams. In similar situations to the typical form. General.

**Prunella vulgaris** var. *lanceolata* f. *iodacalyx* Fernald, Rh. 15: 184. 1913.

Occasionally found with the typical form. Scattered: Ralls, St. Louis, Franklin, Stone, and Jasper counties.

**Physostegia virginiana** (L.) Benth. Obedient Plant, False Dragon-head.

Moist ground, along prairie streams, and in glades. Circumneutral. General.

**Physostegia intermedia** (Nutt.) Engelm. & Gray.

Low wet woods and swamps. Circumneutral. Southeastern Mo.: Dunklin, Butler, and Ripley counties.

**Physostegia formosior** Lunell, Bull. Leeds Herb. 2: 7. 1908.

Rocky open ground. Circumneutral. Central and southern Mo., scattered: St. Louis, Iron, Jackson, and Cass counties.

**LAMIUM AMPLEXICAULE** L. Henbit.

Lawns, meadows, and cultivated or waste ground. Indifferent. General.

**LAMIUM PURPUREUM** L. Dead Nettle.

Roadsides and waste ground. Indifferent. Scattered: St. Charles, St. Louis, Saline, Barry, Jasper, and Jackson counties.

**LEONURUS CARDIACA** L. Motherwort.

Fields, roadsides, and waste ground about dwellings. Indifferent. General.

**Stachys tenuifolia** Willd. Hedge Nettle.

Rich woods, thickets, and roadsides. Circumneutral. General.

**Stachys aspera** Michx.

Low moist ground. Circumneutral. Local: St. Louis Co.

***Stachys hispida* Pursh.**

*Stachys tenuifolia* Willd. var. *aspera* of auth., not *S. aspera* Michx. (G).

*Stachys aspera* of auth., not Michx. (B & B).

Low alluvial ground. Circumneutral. Northern, central, and eastern Mo.:

Perry, Audrain, Ralls, Sullivan, Worth, Clay, and Jackson counties.

***Stachys palustris* L.**

Thickets and moist ground along prairie streams. Circumneutral. Northern Mo., local: Daviess Co.

***Stachys ambigua* Sm.**

*Stachys palustris* of auth. in part, not L.

Open or moist ground along streams. Circumneutral. General but scattered: Clark, Scotland, Knox, Adair, St. Charles, St. Louis, New Madrid, Pemiscot, Putnam, Atchison, Holt, Andrew, Ray, and Jackson counties.

***Salvia lyrata* L. Cancer-weed.**

Rich or rocky woods, thickets, and moist open ground. Circumneutral to oxylophile. East-central and southern Mo., commonest in the eastern Ozark region: St. Louis, Jefferson, Washington, St. Francois, Ste. Genevieve, Perry, Bollinger, Madison, Iron, Wayne, Butler, Dunklin, Ripley, Carter, Oregon, Shannon, Texas, Howell, Douglas, Taney, and Barry counties.

***Salvia azurea* Lam. var. *grandiflora* Benth. Blue Sage.**

Rocky prairies, roadsides, and glades. Circumneutral to calciphile. West-central and southwestern Mo.: Jackson, Cass, Johnson, Henry, Greene, Ozark, Taney, Stone, Barry, Barton, Jasper, Newton, and McDonald counties, and also introduced in St. Louis Co.

***Salvia lanceaefolia* Poir.**

Plains, fields, and waste ground. Indifferent. Perhaps native in northwestern Mo., but introduced in most of the state. General but scattered: Monroe, Marion, Montgomery, Warren, St. Charles, St. Louis, Mississippi, Stoddard, Ripley, Texas, Greene, Livingston, Caldwell, Atchison, Holt, Andrew, Gentry, Dekalb, Jackson, Johnson, Jasper, and McDonald counties.

***SALVIA SCLAREA* L. Clear-eye.**

Cultivated and rarely escaped to roadsides and waste ground. St. Louis Co.

***Monarda didyma* L. Bee Balm.**

Moist open woods. Circumneutral. Pike and Clay counties. Probably escaped from cultivation.

***Monarda pectinata* Nutt.**

Along railways and in waste ground. Introduced in Jackson Co.

***Monarda fistulosa* L. Wild Bergamot.**

Rocky prairies, thickets, and roadsides. Circumneutral to calciphile. General but scattered: Schuyler, Scotland, Sullivan, Adair, Marion, Ralls, Randolph, Boone, St. Louis, Jefferson, Ste. Genevieve, St. Francois, Dunklin, Butler, Ripley, Shannon, Maries, Dent, Phelps, Pulaski, Howell, Taney, Barry, Buchanan, Jackson, Barton, Jasper, and McDonald counties.

***Monarda fistulosa* var. *mollis* (L.) Benth.**

*Monarda mollis* L. (G), (B & B).

Rocky prairies, thickets, and roadsides. Circumneutral. General.

**Monarda Bradburiana** Beck.

Open rocky woods, thickets, and glades. Circumneutral to calciphile. Eastern, central, and southern Mo., south and east of a line from Marion, Boone, and Benton counties to Jasper Co.

**Monarda punctata** L. Horse Mint.

Prairies and open ground. Circumneutral to oxylophile. Southeastern Mo., scattered: Scott and Dunklin counties.

**Monarda punctata** var. *villicaulis* Pennell, Bull. Torr. Bot. Club 46: 186. 1919.

Sandy open ground. Circumneutral to oxylophile. Eastern Mo., scattered: Clark, Pike, and Dunklin counties.

**Monarda punctata** var. *occidentalis* (Epling) Palmer & Steyermark, comb. nov.

*Monarda punctata* subsp. *occidentalis* Epling, Madroño 3: 25. 1935.

Open ground. Circumneutral. Western Mo., local: Jackson Co.

**Monarda citriodora** Cerv.

*Monarda dispersa* Small (B & B).

Rocky prairies, glades, and bald knobs. Calciphile to circumneutral. Central and southwestern Mo.: St. Louis, Boone, Jackson, St. Clair, Greene, Taney, Stone, Barry, Jasper, and McDonald counties.

**Blephilia hirsuta** (Pursh) Benth. Wood Mint.

Rich open woods and thickets. Circumneutral. General.

**Blephilia ciliata** (L.) Raf. Ohio Horse Mint.

Open woods and thickets. Circumneutral. General.

**Hedeoma pulegioides** (L.) Pers. Pennyroyal.

Rocky open woods, thickets, and glades. Circumneutral. General.

**Hedeoma hispida** Pursh.

Rocky prairies and glades. Circumneutral to oxylophile. General but scattered: Shelby, Boone, Lincoln, St. Louis, Jefferson, Franklin, Washington, St. Francois, Ste. Genevieve, Madison, Iron, Reynolds, Dunklin, Shannon, Dent, Laclede, Wright, Douglas, Webster, St. Clair, Harrison, Platte, Clay, Jackson, Cass, Jasper, and Newton counties.

**HEDEOMA ACINIODES** Scheele.

Waste ground. Introduced in Jasper Co.

**Satureja glabra** (Nutt.) Fernald. Savory, Calamint.

Rocky open ledges and glades. Calciphile. Central and southern Mo.: St. Louis, Jefferson, St. Francois, Ste. Genevieve, Washington, Iron, Reynolds, Carter, Ripley, Oregon, Shannon, Texas, Phelps, Maries, Pulaaki, Miller, Douglas, Wright, Ozark, Taney, Benton, Hickory, St. Clair, Polk, Greene, Stone, Barry, and McDonald counties.

**MELISSA OFFICINALIS** L. Lemon Balm.

Thickets, roadsides, and waste ground. Indifferent. Central and southern Mo., scattered: Boone, St. Louis, Jefferson, Greene, Stone, Barry, Jackson, Jasper, Newton, and McDonald counties.

**Pycnanthemum Torrei** Benth.

Dry open ground. Oxylophile. Southeastern Mo.: Dunklin Co.

**Pycnanthemum flexuosum** (Walt.) BSP. Mountain Mint.

Rocky open woods and thickets. Circumneutral. General and common.

*Pycnanthemum pilosum* Nutt.

Prairies, thickets, and open woods. Circumneutral. General.

*Pycnanthemum virginianum* (L.) Durand & Jackson.

Rocky woods, crevices of bluffs, and thickets. Circumneutral to calciphile. Central and southern Mo.: Boone, Audrain, St. Louis, Jefferson, St. Francois, Iron, Butler, Carter, Oregon, Shannon, Texas, Dent, Howell, Saline, Jackson, Benton, Greene, Hickory, Taney, and Stone counties.

*Pycnanthemum incanum* (L.) Michx.

Rocky open woods. Oxylophile. Southern Mo., scattered: Dunklin, Butler, Ripley, Shannon, and Barry counties.

*Pycnanthemum albescent* T. & G.

Rocky open woods. Oxylophile. Southern Mo.: Madison, Ste. Genevieve, Perry, Wayne, Dunklin, Butler, Ripley, Dent, Shannon, Phelps, Pulaski, Texas, Howell, Ozark, Douglas, Barry, Newton, and McDonald counties. This has often been confused with the preceding, but is the commoner of the two species.

*Pycnanthemum muticum* (Michx.) Pers.

Rocky open woods. Circumneutral. Southeastern Mo.: Dunklin and Butler counties.

*Osmunda fragrans* (L.) Britton. Dittany.

Rocky woods. Circumneutral to oxylophile. Central and southern Mo., south and east of a line drawn from Lincoln, Boone, Morgan, and Hickory counties to Jasper Co.

*Lycopus virginicus* L. Bugle Weed.

Low wet woods and open ground. Circumneutral. General.

*Lycopus rubellus* Moench. Water Horehound.

Low woods and borders of streams and ponds. Circumneutral. Central and southern Mo.: Boone, St. Louis, Jefferson, Mississippi, Dunklin, Butler, Carter, Shannon, Dent, Texas, Howell, Ozark, Taney, Greene, Barry, Jasper, Newton, and McDonald counties.

*Lycopus lucidus* Turcz. var. *americanus* Gray.

*Lycopus asper* Greene (B & B).

Low sandy ground along Missouri River. Oxylophile. West-central Mo., local: Jackson Co.

*Lycopus americanus* Muhl.

Low wet woods, margins of ponds, and along prairie streams. Circumneutral. General.

*Mentha longifolia* Huds. See Rh. 26: 171-175. 1924.

*Mentha sylvestris* L.

Escaped from cultivation to waste ground and roadsides. Indifferent. Scattered: Clay, Jackson, and Jasper counties.

*Mentha alpestris* Hull. Woolly Mint.

Waste ground, fields, and roadsides. Indifferent. Introduced in Jackson Co.

*Mentha cordata* Gerarde.

Waste ground and borders of springs and brooks. Indifferent. Introduced in Jasper Co.

**MENTHA SPICATA L.** Spearmint.

Waste ground and roadsides, especially about dwellings. Indifferent. General, but scattered: Balls, Boone, Franklin, Jefferson, Dunklin, Dent, Shannon, Phelps, Howell, Cedar, Greene, Stone, Jasper, and Newton counties.

**MENTHA PIPERITA L.** Peppermint.

Waste ground and margins of springs or spring branches. Circumneutral. General.

**MENTHA CITRATA Ehrh.** Bergamot Mint.

Waste ground and along spring branches. Introduced in Jasper Co.

**MENTHA GENTILIS L.**

Waste ground. Indifferent. Introduced in Jackson Co.

**Mentha arvensis L.**

Low ground along streams. Circumneutral. Southeastern Mo., local: Ripley Co.

**Mentha arvensis L. var. canadensis (L.) Briq.** Corn Mint, Field Mint.

Moist ground along small streams and about springs. Circumneutral. General, but less common than the next. Typical *Mentha arvensis* is rare in Mo.

**Mentha arvensis var. glabrata (Benth.) Fernald.**

In similar situations to the preceding. Circumneutral. General and common. This is the commonest variety found in Missouri.

**Collinsonia canadensis L.** Horse Balm.

Rich or rocky woods. Circumneutral to oxylophile. Eastern Ozark region: Iron, Wayne, Reynolds, and Shannon counties.

**PERILLA FRUTESCENS (L.) Britton.** Beef-steak Plant.

Dry woods, rich or alluvial soil along streams, and waste ground. Circumneutral. Escaped and becoming a troublesome weed along some of the Ozark streams. Eastern, central and southern Mo. north to St. Louis, Montgomery, and Jackson counties.

**Fam. SOLANACEAE****SOLANUM DULCAMARA L.** Climbing Nightshade.

Thickets and roadsides. Indifferent. Scattered: Adair, Boone, St. Louis, Jefferson, Jackson, and Greene counties.

**Solanum triflorum Nutt.**

Waste ground and along railroads. Introduced from farther west. Jackson Co.

**Solanum nigrum L.** Black Nightshade.

Waste and cultivated ground. Indifferent. General and common.

**Solanum carolinense L.** Bull or Horse Nettle.

Rocky prairies, roadsides, and waste ground. Circumneutral. General.

**Solanum elaeagnifolium Cav.** White Horse Nettle.

Rocky prairies, roadsides, and waste ground. Circumneutral. Central and southern Mo.: St. Louis, Butler, Boone, Saline, Jackson, Barry, Jasper, Newton, and McDonald counties. Perhaps native in southwestern Mo. and introduced in other sections.



***Solanum Torreyi* Gray.**

Rocky open ground and along railroads. Circumneutral to oxylophile. Scattered: St. Louis, Iron, Jackson, and Barry counties. Apparently native in southwestern Mo., and introduced elsewhere.

***Solanum rostratum* Dunal. Buffalo Bur.**

Waste ground and roadsides. Indifferent. General. Introduced from the Southwest and recently spreading over the state.

***Physalis ixocarpa* Brotero. Tomatillo.**

Cultivated and occasionally escaped into waste ground. Jackson Co.

***Physalis angulata* L.**

Cultivated and waste ground, usually on alluvial soil. Circumneutral. Scattered: Pemiscot, St. Louis, Henry, and Jasper counties.

***Physalis pendula* Rydb.**

Alluvial cultivated and waste ground. Circumneutral. Western Mo.: Jackson and Jasper counties.

***Physalis pubescens* L. Ground Cherry.**

Cultivated and waste ground, moist open fields and ledges along streams. Circumneutral. Southern and central Mo., north to St. Louis and Jackson counties.

***Physalis pruinosa* L. Strawberry Tomato.**

Rocky open ground, roadsides, rich alluvial and waste ground. Circumneutral. General but scattered: Marion, Ralls, Boone, St. Louis, Wayne, Shannon, Taney, Jackson, Barry, and Jasper counties.

***Physalis barbadensis* Jacq.**

Moist rocky ground along streams, and ledges along bluffs. Circumneutral. Western and southern Mo.: Ozark, Taney, Jackson, and Jasper counties.

***Physalis barbadensis* var. *obscura* (Michx.) Rydb.**

Rich or rocky woods, bluffs, sandy open ground, and banks along streams. Circumneutral. Central and southern Mo.: St. Louis, New Madrid, Dunklin, Butler, Shannon, Taney, Jackson, and Barry counties.

***Physalis missouriensis* Mack. & Bush.**

Rich woods along bluffs and streams. Circumneutral. Eastern, southern, and central Mo.: Marion, Boone, St. Louis, Jefferson, Shannon, Oregon, Greene, Taney, Barry, Platte, Jackson, Jasper, and McDonald counties. This has been confused with *Physalis Lagascae*, a southern species not found in Mo.

***Physalis heterophylla* Nees.**

Roadsides, fields, and waste ground. Circumneutral. General.

***Physalis heterophylla* var. *ambigua* (Gray) Rydb.**

Occasionally found with the typical form. Adair, St. Louis, Boone, and Webster counties.

***Physalis heterophylla* var. *nyctaginea* (Dunal) Rydb.**

Occasionally found with the typical form. Scattered: Scotland, Cole, Miller, Oregon, Jackson, and Greene counties.

***Physalis pumila* Nutt.**

Dry or rocky open ground, prairies, and glades. Circumneutral. General, but scattered: Macon, St. Louis, Phelps, Barry, Greene, Jackson, Clay, Vernon, and Jasper counties.

***Physalis subglabrata* Mack. & Bush.**

Thickets, prairies, and cultivated and waste ground. Circumneutral. General.

***Physalis longifolia* Nutt.**

Fields and waste ground. Circumneutral. Eastern Mo.: Marion and St. Charles counties.

***Physalis virginiana* Mill. Ground Cherry.**

Dry prairies, rocky open woods, thickets, and waste ground. Circumneutral to oxylophile. General.

***Physalis lanceolata* Michx.**

Prairies and sandy or rocky open ground. Circumneutral. Western Mo., local: Jackson Co.

***PHYSALIS PERUVIANA* L.**

Waste ground. Introduced in St. Louis Co.

***LYCOPERSICON ESCULENTUM* Mill. See Rh. 11: 56. 1909. Tomato.**

Cultivated and escaping in many places. Scattered: St. Louis, Dunklin, Boone, Jackson, and Jasper counties. Well established along gravel and sand bars of streams and in other situations in some sections.

***NICANDRA PHYSALODES* (L.) Pers. Apple-of-Peru.**

*Physalodes physalodes* (L.) Britton (B & B).

Cultivated fields and waste ground. Circumneutral. Scattered: Marion, Boone, St. Louis, Crawford, Phelps, Greene, Stone, Jackson, and Newton counties.

***LYCIUM HALIMIFOLIUM* Mill. Matrimony Vine.**

Waste ground, roadsides, and about old dwellings. Indifferent. General but scattered: Shelby, Marion, Boone, St. Louis, Jefferson, St. Francois, Cole, Atchison, Clay, Jackson, Greene, Jasper, and Newton counties.

***DATURA STRAMONIUM* L. Jimson Weed.**

Cultivated and waste ground. Indifferent. General and common.

***DATURA TATULA* L. Jimson Weed, Purple Thorn Apple.**

Cultivated and waste ground. Indifferent. General.

***DATURA METEL* L.**

Waste ground and roadsides. Indifferent. Scattered: Boone, St. Louis, Phelps, Vernon, and Jasper counties.

***NICOTIANA RUSTICA* L. Wild Tobacco.**

Cultivated and waste ground. Indifferent. St. Louis Co.

***NICOTIANA LONGIFOLIA* Cav.**

Cultivated and escaping into waste ground. Indifferent. St. Louis Co.

**Fam. SCROPHULARIACEAE*****VERBASCUM THAPSUS* L. Mullein.**

Pastures, roadsides, and waste ground. Indifferent. General and common.

*VERBASCUM BLATTARIA* L. Moth Mullein.

Pastures, roadsides, and waste ground. Indifferent. General.

*VERBASCUM BLATTARIA* f. *ALBIFLORUM* (G. Don) House, N. Y. Mus. Bull. 243-244: 45. 1923.

Commonly found with the typical form. General.

*LINARIA VULGARIS* Hill. Butter and Eggs.

Fields, waste ground, and along roadsides and railroads. Oxylophile to circumneutral. General.

*Linaria canadensis* (L.) Dumont var. *texana* (Scheele) Pennell, Proc. Acad. Nat. Sci. Phila. 73: 502. 1921. Blue Toadflax.

Rocky prairies, glades, bluffs, and sandy or cherty open ground. Oxylophile. Eastern, central, and southern Mo.: Marion, Lincoln, Montgomery, Warren, St. Charles, St. Louis, Jefferson, Franklin, Ste. Genevieve, St. Francois, Washington, Crawford, Dent, Shannon, Oregon, Iron, Madison, Bollinger, Scott, Mississippi, Dunklin, Butler, Wayne, Jackson, St. Clair, Polk, Greene, Lawrence, Vernon, Jasper, Newton, and McDonald counties. Typical *Linaria canadensis* has a more eastern range and does not extend to Mo.

*LINARIA CYMBALARIA* (L.) Mill. Kenilworth Ivy.

Waste ground and roadsides. Indifferent. Introduced in Marion and St. Louis counties.

*LINARIA SPURIA* (L.) Mill. Cancerwort.

Rocky waste ground, and along sand and gravel bars of streams. Scattered: Boone, Barry, and McDonald counties.

*KICKXIA ELATINE* (L.) Dumort. See Torreya 22: 81-84. 1922. Cancer-root.

*Linaria elatine* (L.) Mill. (G).

Waste ground, and along sand and gravel bars of streams. Oxylophile. Central and southern Mo., scattered: St. Louis, Jefferson, Franklin, Gasconade, Perry, Bollinger, Reynolds, Shannon, Oregon, Texas, Laclede, Douglas, Clay, and Jackson counties.

*Collinsia verna* Nutt. Blue-eyed-Mary.

Rich woods and thickets. Circumneutral to calciphile. Central and southern Mo., scattered southward: Warren, St. Charles, St. Louis, Jefferson, St. Francois, Scott, Audrain, Callaway, Boone, Cole, Laclede, Montgomery, Howard, Cooper, Saline, Clay, Jackson, Cass, Johnson, Barry, and McDonald counties.

*Collinsia violacea* Nutt.

Rocky open woods. Circumneutral to oxylophile. Southern Mo.: Jefferson, Dunklin, Benton, Henry, St. Clair, Cedar, Polk, Greene, Bates, Vernon, Jasper, and Newton counties.

*Scrophularia marilandica* L. Figwort.

Open woods and thickets. Circumneutral. General.

*Scrophularia lanceolata* Pursh. See Torreya 22: 81-84. 1922.

*Scrophularia leporella* Bicknell (G), (B & B).

Open woods and thickets. Circumneutral. Western Mo., local: Jackson Co.

*Pentstemon pallidus* Small. Beard-tongue.

*Pentstemon canescens* of auth., not Britton (G), in part.

Prairies, open woods, and bluffs. Oxylophile to circumneutral.

***Pentstemon calycosus* Small.**

Rocky woods and bluffs. Circumneutral. Eastern and southern Mo., scattered: St. Louis and Texas counties.

***Pentstemon tubiflorus* Nutt.**

Prairies and open woods. Oxylophile to circumneutral. General, but commonest in southwestern Mo., and absent from much of the Ozark region and the southeastern lowlands: Putnam, Marion, Shelby, Monroe, Boone, Franklin, Cape Girardeau, Dunklin, Pulaski, Camden, Laclede, Douglas, Wright, Webster, Greene, Taney, Christian, Barry, Hickory, Clay, Jackson, Vernon, Barton, Jasper, Newton, and McDonald counties.

***Pentstemon arkansanus* Pennell, Proc. Acad. Nat. Sci. Phila. 73: 493. 1921.**

Rocky open woods, bluffs, and glades. Circumneutral to oxylophile. Southern Mo.: Madison, Ozark, Taney, Stone, Barry, Newton, and McDonald counties.

***Pentstemon arkansanus* var. *pubescens* Pennell, Proc. Acad. Nat. Sci. Phila. 73: 494. 1921.**

Occasionally found with the typical form. Barry Co.

***Pentstemon Digitalis* (Sweet) Nutt.**

*Pentstemon laevigatus* var. *Digitalis* (Sweet) Gray (G).

Open woods, thickets, prairies, and meadows. Circumneutral. General.

***Pentstemon grandiflorus* Nutt.**

Loess hills and plains. Circumneutral to calciphile. Northwestern Mo.: Atchison Co.

***Pentstemon Cobaea* Nutt. var. *purpureus* Pennell, Proc. Acad. Nat. Sci. Phila. 73: 490. 1921.**

Glades and bald knobs. Calciphile to circumneutral. Southwestern Mo.: Ozark, Stone, and Taney counties.

***Chelone glabra* L. Turtlehead.**

Wet rocky or boggy ground along small streams and bluffs. Oxylophile. Southeastern and central Mo.: Boone, St. Louis, Jefferson, Franklin, Bollinger, Stoddard, Dunklin, Butler, Clinton, Clay, and Jackson counties.

***Chelone obliqua* L. var. *speciosa* Pennell & Wherry, Bartonia 10: 19, pl. 2, fig. 1. 1929.**

Swamps and borders of streams. Oxylophile to circumneutral. Northeastern and central Mo.: Lewis and Chariton counties.

***PAULOWNIA TOMENTOSA* (Thunb.) Steud. Empress Tree.**

Planted and occasionally escaped. Marion, Perry, and Ripley counties.

***Mimulus ringens* L. Monkey Flower.**

Bogs, low woods, and borders of streams, commonest in alluvial soils along the larger rivers. Circumneutral. General.

***Mimulus alatus* Ait.**

Bogs, low woods, and borders of streams. Circumneutral. General. Commoner than the preceding species.

***Mimulus glabratus* HBK. var. *Fremontii* (Benth.) Grant, Ann. Mo. Bot. Gard. 11: 190. 1924.**

Wet ledges along bluffs, and about springs. Circumneutral to oxylophile. Southern Mo., scattered: Ste. Genevieve, Greene, and Barry counties.

*Leucospora multifida* (Michx.) Nutt.

*Conoclinium multifida* (Michx.) Benth. (G), (B & B).

Low open woods and fields. Circumneutral. Central and southern Mo.

*Mecardonia acuminata* (Walt.) Small. Water Hyssop.

*Bacopa acuminata* (Walt.) Robinson (G).

Low wet woods, swamps, and sloughs. Oxylophile to circumneutral. Southern Mo.: Mississippi, Dunklin, Jasper, and Newton counties.

*Macuillamia rotundifolia* (Michx.) Raf. See Torreya 22: 79. 1922.

*Bacopa rotundifolia* (Michx.) Wettst. (G).

*Bramia rotundifolia* (Michx.) Britton (B & B).

Low wet woods, and borders of ponds, sloughs, and streams. Circumneutral to oxylophile. Central and southern Mo., scattered: Boone, Lincoln, St. Charles, St. Louis, Jefferson, Dent, Maries, Ray, Jackson, Cass, Greene, Jasper, Newton, and McDonald counties.

*Ilysanthes dubia* (L.) Barnhart. False Pimpernel.

Low wet woods and borders of sloughs and ponds. Circumneutral. General: Putnam, Marion, Boone, Lincoln, St. Charles, St. Louis, Jefferson, Franklin, Ste. Genevieve, Iron, Mississippi, Dunklin, Butler, Harrison, Buchanan, Clay, Jackson, Bates, Vernon, Greene, Taney, Stone, Jasper, and Newton counties.

*Ilysanthes inaequalis* (Walt.) Pennell, Torreya 19: 149. 1919.

*Ilysanthes anagallidea* of auth. in part, not *Gratiola anagallidea* Michx. (G).

*Ilysanthes dubia* of auth., not *Gratiola dubia* L. (B & B).

Wet ground along streams, and borders of ponds and sloughs. Circumneutral to oxylophile. General but scattered: Linn, Monroe, Ralls, Boone, St. Louis, Ste. Genevieve, St. Francois, Mississippi, Dunklin, Buchanan, Jackson, Henry, Greene, Taney, Barton, Jasper, and Newton counties.

*Gratiola lutea* Raf. See Rh. 34: 147. 1932. Clammy Hedge Hyssop.

*Gratiola virginiana* of auth., not L. (G), (B & B).

*Gratiola neglecta* Torr.

Low woods and muddy borders of ponds, sloughs, and slow streams. Circumneutral. General.

*Gratiola virginiana* L. See Rh. 20: 65. 1918.

*Gratiola sphaerocarpa* Ell. (G), (B & B).

Muddy borders of ponds, sloughs, and ditches. Circumneutral. General but scattered: Schuyler, Adair, Shelby, Marion, Monroe, Audrain, Boone, Callaway, St. Louis, Washington, Shannon, Dent, Ripley, Texas, Laclede, Howell, Ozark, Wright, Webster, Linn, Livingston, Saline, Jackson, Benton, Greene, Jasper, and Newton counties.

*Veronicastrum virginicum* (L.) Farwell, Drug. Circ. 61: 231. 1917. Culver's-root.

*Veronica virginica* L. (G).

*Leptandra virginica* (L.) Nutt. (B & B).

Open woods and thickets. Circumneutral. General.

*Veronicastrum virginicum* f. *villosa* (Raf.) Pennell, Rh. 23: 6. 1921.

In similar situations to the preceding. Circumneutral. General and commonly occurring with the species.

**Veronica serpyllifolia** L. Thyme-leaved Speedwell.

Swampy woods and waste ground. Circumneutral to oxylophile. Southeastern Mo.: Cape Girardeau, Bollinger, and Stoddard counties.

**Veronica peregrina** L. Neckweed.

Cultivated and waste ground. Indifferent. General and common.

**Veronica peregrina** var. **xalapensis** (HBK.) Pennell, Torreya 19: 167. 1919.

Occasionally found with the typical form. Waste ground. Indifferent. Scattered: St. Louis and Pemiscot counties.

**VERONICA ARVENSIS** L. Corn Speedwell.

Cultivated and waste ground, and open rocky woods, glades, and ledges along bluffs. Circumneutral to calciphile. General.

**Veronica connata** Raf. Water Speedwell.

*Veronica Anagallis-aquatica* of auth. in part, not L. (G), (B & B).

In and along streams and spring branches. Circumneutral to oxylophile. West-central and southern Mo., scattered: Perry, Bollinger, Reynolds, Ripley, Oregon, Shannon, Dent, Camden, Texas, Howell, Laclede, Dallas, Benton, Douglas, Ozark, Barry, and Jackson counties.

**Veronica americana** Schwein. American Brooklime.

Wet open ground. Indifferent. Local: Boone Co.

**Limosella subulata** Ives. See Rh. 20: 160. 1918; also Torreya 22: 83-84. 1922. Mudwort.

*Limosella aquatica* var. *tenuifolia* of auth., not L. *tenuifolia* Wolf (G).

*Limosella aquatica* of auth., not L. (B & B).

Sand bars of Missouri River. Local: Jackson Co.

**Dasistoma macrophylla** (Nutt.) Raf. See Rh. 20: 68. 1918. False Foxglove.

*Seymeria macrophylla* Nutt. (G).

*Azsellia macrophylla* (Nutt.) Ktze. (B & B).

Open woods and thickets. Oxylophile. General.

**Aureolaria grandiflora** (Benth.) Pennell var. **cinerea** Pennell, Proc. Acad. Nat. Sci. Phila. 73: 510. 1921.

*Gerardia grandiflora* var. *serrata* (Torr.) Robinson, in part (G).

*Dasystoma serrata* (Benth.) Small, in part (B & B).

Rocky woods and thickets. Oxylophile. Middle and western Mo., mostly south of the Missouri River: Crawford, Dent, Gasconade, Boone, Moniteau, Miller, Pulaaki, Phelps, Benton, Camden, Polk, Greene, Webster, Wright, Douglas, Ozark, Christian, Taney, Stone, Barry, Henry, Cedar, Vernon, Jasper, Newton, and McDonald counties.

**Aureolaria grandiflora** var. **pulchra** Pennell, Proc. Acad. Nat. Sci. Phila. 80: 392. 1928.

Rich or rocky open woods. Oxylophile. Northeastern and east-central Mo.: Clark, Knox, Macon, Adair, Schuyler, Sullivan, Shelby, Marion, Ralls, Monroe, Lincoln, St. Charles, St. Louis, Jefferson, Franklin, Crawford, Gasconade, and Maries counties.

**Aureolaria pectinata** (Nutt.) Pennell, Bull. Torr. Bot. Club 40: 414. 1913. Yellow False Foxglove.

*Gerardia pedicularis* var. *pectinata* Nutt., in part (G).



*Dasystoma pectinata* (Nutt.) Benth., in part (B & B).

Rocky open woods and borders of glades. Oxylophile. East-central and southern Mo.: St. Louis, Jefferson, Franklin, Iron, Madison, Wayne, Oregon, Shannon, Dent, Crawford, Maries, Pulaski, Texas, Wright, Webster, Greene, Howell, Douglas, Ozark, Stone, and Barry counties.

*Aureolaria flava* (L.) Farwell var. *macrantha* Pennell, Proc. Acad. Nat. Sci. Phila. 73: 511. 1921.

*Gerardia flava* L., in part (G).

*Dasystoma flava* (L.) Wood, in part (B & B).

Rocky woods. Oxylophile. Southern Mo., mainly in the eastern Ozark region: Phelps, Reynolds, Iron, Madison, Wayne, Scott, and Oregon counties.

*Aureolaria calycosa* (Mack. & Bush) Pennell, Proc. Acad. Nat. Sci. Phila. 73: 512. 1921.

*Dasystoma calycosa* Mack. & Bush (B & B).

Rocky open woods and borders of glades. Oxylophile. Southern Mo., mostly in the eastern Ozark region: St. Francois, Madison, Bollinger, Cape Girardeau, Iron, Wayne, Carter, Ripley, Shannon, Oregon, Texas, Howell, Douglas, and Ozark counties.

*Otophylla auriculata* (Michx.) Small. See Rh. 20: 137. 1918.

*Gerardia auriculata* Michx. (G).

Prairies, thickets, and open woods. Circumneutral to oxylophile. General but scattered: Clark, Adair, St. Louis, Shannon, Ozark, Greene, Barton, Jasper, Newton, and McDonald counties.

*Agalinis purpurea* (L.) Pennell.

*Gerardia purpurea* L. (G).

Prairie swales and moist open ground along small streams. Circumneutral to oxylophile. Southern and west-central Mo., scattered: Stoddard, Shannon, Jackson, and Greene counties.

*Agalinis aspera* (Dougl.) Britton.

*Gerardia aspera* Dougl. (G).

Prairie swales and moist ground along small streams. Circumneutral. Western Mo., and locally eastward in Crawford Co.: Atchison, Holt, Jackson, Jasper, and Crawford counties.

*Agalinis fasciculata* (Ell.) Raf.

*Gerardia fasciculata* Ell. (G).

Prairie swales and borders of woods and thickets. Circumneutral. Southwestern Mo.: Bates, Barton, Jasper, and Newton counties.

*Agalinis tenuifolia* (Vahl) Raf.

*Gerardia tenuifolia* Vahl (G).

Prairie swales and moist open banks. Circumneutral to oxylophile. Central and southern Mo.: Boone, St. Louis, Jefferson, Franklin, St. Francois, Dent, Shannon, Carter, Oregon, Jackson, Benton, Christian, and Jasper counties.

*Agalinis tenuifolia* var. *macrophylla* (Benth.) Blake, Rh. 20: 71. 1918.

*Gerardia tenuifolia* var. *macrophylla* Benth. (G).

*Gerardia Besseyana* Britton (B & B).

Prairies and moist open ground. Circumneutral to oxylophile. General. This is the commonest form throughout the state.

*Agalinis tenuifolia* var. *parviflora* (Nutt.) Pennell, Proc. Acad. Nat. Sci. Phila. 73: 525. 1921.

Prairie swales and open banks. Circumneutral to oxylophile. Middle and western Mo., scattered: Boone, Jackson, Douglas, Greene, and Jasper counties.

*Agalinis Gatteringeri* Small.

*Gerardia tenuifolia* of auth., not Vahl (G.), in part.

Rocky open woods. Oxylophile. Eastern, central, and southern Mo.: Clark, Boone, Osage, Franklin, Crawford, Madison, Iron, Shannon, Texas, Miller, Ozark, Taney, Greene, Barry, Jasper, Newton, and McDonald counties.

*Agalinis Skinneriana* (Wood) Britton.

*Gerardia Skinneriana* Wood (G.).

Dry open woods and thickets. Oxylophile. West-central and southern Mo.: Iron, Dunklin, Shannon, Taney, Barry, Jackson, Jasper, Newton, and McDonald counties.

*Agalinis viridis* (Small) Pennell.

*Gerardia viridis* Small.

Thickets, open banks, and borders of woods. Oxylophile. Southern Mo., scattered: Shannon, Dunklin, and Jasper counties.

*Agalinis heterophylla* (Nutt.) Small.

Moist sandy open ground. Oxylophile. Southeastern Mo.: Dunklin Co.

*Buchnera americana* L. Blue Hearts.

Upland prairies and glades. Circumneutral to oxylophile. East-central and southern Mo.: St. Louis, Jefferson, Iron, Dent, Shannon, Ripley, Howell, Greene, Stone, Barton, Jasper, Newton, and McDonald counties.

*Castilleja coccinea* (L.) Spreng. Indian Blanket, Painted Cup.

Upland prairies, glades, and moist open woods. Circumneutral. General but uncommon in most sections.

*Castilleja coccinea* f. *lutescens* Farwell, Am. Midl. Nat. 8: 276. 1923.

Occasionally found with the typical form. Washington, Camden, Jasper, and Newton counties.

*Castilleja sessiliflora* Pursh.

Loess hills and plains. Calciphile. Northwestern Mo.: Atchison and Holt counties.

*Castilleja purpurea* G. Don.

Rocky open ground. Circumneutral. Southwestern Mo., local: Greene Co.

*Pedicularis canadensis* L. Wood Betony, Lousewort.

Open woods, thickets, and prairies. Circumneutral to oxylophile. General.

*Pedicularis lanceolata* Michx.

Wet woods and bogs. Oxylophile. Southern Mo., scattered: Iron, Shannon, Morgan, and Greene counties.

#### FAM. LENTIBULARIACEAE

*Utricularia vulgaris* L. var. *americana* Gray. Large Bladderwort.

Sloughs, ponds, and sluggish streams. Circumneutral. General but scattered: Putnam, St. Charles, St. Louis, Jefferson, Reynolds, Butler, Dunklin, Oregon,

Platte, Clay, Jackson, Greene, and Jasper counties. This has been confused with *Utricularia minor*, which is not known in Mo.

***Utricularia gibba* L.**

Stagnant water of ponds, lakes, and sloughs. Circumneutral. Central and southern Mo., scattered: Boone, St. Charles, St. Louis, Iron, Reynolds, Dunklin, Oregon, Texas, Greene, Jackson, and Jasper counties. This species has been confused frequently with *Utricularia pumila* Walt. (*U. biflora* Lam.) which is not known to occur in Mo.

**Fam. OROBANCHACEAE**

***Orobanche uniflora* L.** Small Cancer-root.

Rocky open woods and fields. Oxylophile. General but scattered: Ralls, Boone, Cole, St. Louis, Jefferson, Franklin, Ste. Genevieve, Iron, Carter, Crawford, Phelps, Maries, Miller, Camden, Greene, Christian, Platte, Jackson, Johnson, Henry, Vernon, Jasper, Barry, and McDonald counties.

***Epifagus virginiana* (L.) Bart.** Beech-drops.

Rich woods, under beech trees. Circumneutral to oxylophile. Crowleys Ridge, southeastern Mo., local: Scott Co.

**Fam. BIGNONIACEAE**

***Campsis radicans* (L.) Seem.** Trumpet Creeper, Trumpet-vine.

*Tecoma radicans* (L.) Juss. (G).

*Bignonia radicans* L. (B & B).

Open woods, thickets, banks of streams, and along road and railroad embankments. Indifferent. General, but scattered northward. Native in the Ozark region and introduced or escaped in other sections.

***Bignonia capreolata* L.** Cross-vine.

Low alluvial woods and thickets along streams. Circumneutral to oxylophile. Southeastern Mo.: Iron, Bollinger, Cape Girardeau, Mississippi, Pemiscot, Dunklin, Butler, and Ripley counties.

***Catalpa speciosa* Warder.** Catalpa, Cigar Tree.

Low or upland woods, and also introduced along streams and in waste ground. Eastern and southern Mo.: Pike, Iron, Madison, Bollinger, Cape Girardeau, Scott, Mississippi, New Madrid, Stoddard, Pemiscot, Dunklin, Oregon, Howell, Dallas, Greene, Jasper, and Newton counties. Native in southeastern Mo. and escaped from cultivation elsewhere.

***Catalpa bignonioides* Walt.**

Along streams and roadsides and in waste ground. Indifferent. Scattered: St. Louis, Boone, Jackson, Jasper, and Newton counties. Introduced.

**Fam. PEDALIACEAE**

***SESAMUM ORIENTALE* L.** Benne.

*Sesamum indicum* L.

Sandy open ground. Introduced in Jackson Co.

## Fam. MARTYNIACEAE

*Martynia louisiana* Mill. Devil's-claws, Unicorn Plant.

Pastures, cultivated and waste ground. Calciphile to circumneutral. Scattered: Boone, St. Louis, St. Francois, New Madrid, Dunklin, Ozark, Jackson, Johnson, Dade, and Greene counties.

## Fam. ACANTHACEAE

*Dianthera americana* L. Water Willow.

Borders of shallow streams, sloughs, and ditches. Circumneutral. Central and southern Mo.: Boone, Montgomery, Warren, St. Louis, Jefferson, Franklin, Washington, St. Francois, Ste. Genevieve, Perry, Cape Girardeau, Bollinger, Madison, Iron, Reynolds, Wayne, Carter, Ripley, Oregon, Shannon, Howell, Texas, Dent, Crawford, Gasconade, Osage, Cole, Miller, Maries, Phelps, Pulaski, Laclede, Wright, Webster, Douglas, Ozark, Greene, Christian, Taney, Stone, Morgan, Camden, Miller, Dallas, Hickory, Polk, Barry, Jackson, Jasper, Newton, and McDonald counties.

*Dianthera ovata* Walt.

Low wet woods and borders of swamps. Circumneutral. Southeastern Mo.: Stoddard, New Madrid, Pemisnot, Dunklin, Butler, and Ripley counties.

*Ruellia caroliniensis* (Walt.) Steud. See Rh. 17: 134. 1915. Wild Petunia.

*Ruellia ciliosa* Pursh (G), (B & B).

Rocky prairies, hillsides, and glades. Oxylophile to circumneutral. General.

*Ruellia caroliniensis* var. *parviflora* (Nees) Blake, Rh. 17: 134. 1915.

*Ruellia ciliosa* var. *parviflora* (Nees) Britton (G).

*Ruellia parviflora* (Nees) Britton (B & B).

Glades and rocky ledges. Oxylophile. West-central and southern Mo.: Ste. Genevieve, Butler, Clay, Jackson, Jasper, and Newton counties.

*Ruellia strepens* L.

Rich or rocky open woods and thickets. Circumneutral to calciphile. General.

*Ruellia pedunculata* Torr.

Rocky open woods and glades. Circumneutral to calciphile. East-central and southern Mo.: St. Louis, Jefferson, Franklin, Ste. Genevieve, Iron, Madison, Dunklin, Butler, Carter, Reynolds, Dent, Oregon, Shannon, Texas, Howell, Phelps, Pulaski, Wright, Webster, Douglas, Ozark, Taney, Stone, Barry, and McDonald counties.

*Dicliptera brachiata* (Pursh) Spreng. See Rh. 11: 57. 1909.

*Diapedium brachiatum* (Pursh) Ktze. (B & B).

Low alluvial woods and thickets. Circumneutral. East-central and southern Mo.: St. Louis, Gasconade, Shannon, Ripley, Ozark, Taney, Stone, Barry, Jasper, Newton, and McDonald counties.

## Fam. PHRYMACEAE

*Phryma leptostachya* L. Lopseed.

Rocky or alluvial woods and thickets. Circumneutral. General.

## Fam. PLANTAGINACEAE

*Plantago cordata* Lam.

Swampy woods, sloughs, and rocky stream beds. Circumneutral. Northern, central, and southeastern Mo.: Adair, Boone, St. Louis, Jefferson, Dent, Iron, Carter, and Shannon counties.

*Plantago major* L. Plantain.

Fields, waste ground, and door yards. Indifferent. General, but less common than the next species.

*Plantago Bugellii* Dene. Plantain.

Fields, waste ground, and door yards. Indifferent. General and in every county.

*PLANTAGO LANCEOLATA* L. Rib Grass.

Pastures, roadsides, and waste ground. Indifferent. General. Broad-leaved specimens of this species have sometimes been confused with *Plantago media* which has not been found in Mo.

*Plantago Purshii* R. & S. Salt-and-pepper Plant.

Loess hills, glades, dry prairies, and waste ground. Circumneutral. Central and northwestern Mo.: St. Louis, Holt, Clay, and Jackson counties. Probably native in northwestern Mo. and introduced elsewhere.

*Plantago spinulosa* Dene.

Waste ground. Indifferent. Introduced in Jackson Co.

*Plantago aristata* Michx.

Fields, glades, barrens, and waste ground. Oxylophile to circumneutral. General.

*Plantago virginica* L.

Fields, glades, and rocky waste ground. Oxylophile to circumneutral. General.

*Plantago rhodosperma* Dene.

Waste ground. Indifferent. Introduced in Jackson Co.

*Plantago heterophylla* Nutt.

Sandy open ground. Oxylophile. Southeastern Mo.: Scott Co.

*Plantago elongata* Pursh.

*Plantago pusilla* Nutt. (B & B).

Fallow fields, prairies, and glades. Oxylophile to circumneutral. General but most abundant southward: Boone, Audrain, Marion, Lincoln, Montgomery, St. Louis, Jefferson, Franklin, Ste. Genevieve, Iron, Madison, Cape Girardeau, Dunklin, Butler, Wayne, Ripley, Carter, Shannon, Texas, Phelps, Laclede, Greene, Taney, Jackson, Lawrence, Jasper, and Newton counties.

## Fam. RUBIACEAE

*Galium virgatum* Nutt.

Rocky ledges, glades, and prairies. Calciphile to circumneutral. Central and southern Mo.: St. Louis, Jefferson, Franklin, Washington, Ste. Genevieve, Ripley, Oregon, Gasconade, Shannon, Texas, Laclede, Dallas, Miller, Camden, Benton, Hickory, Polk, St. Clair, Greene, Webster, Ozark, Taney, Stone, Barry, Jasper, Newton, and McDonald counties.

**Galium Aparine** L. Cleavers, Goose Grass.

Rich woods, thickets, alluvial and waste ground. Circumneutral. General.

**Galium Aparine** var. **Vallantii** (DC.) Koch.

In similar situations to the typical form. Jackson and Jasper counties.

**Galium pilosum** Ait.

Rocky woods and thickets. Circumneutral to oxylophile. Central and southern Mo.

**Galium pilosum** var. **punctulosum** (Michx.) T. & G.

Occasionally found with the typical form. Southern Mo., scattered: Jefferson and Jasper counties.

**Galium circaezans** Michx. Wild Licorice.

Rocky woods and thickets. Circumneutral. General.

**Galium arkansanum** Gray.

Rocky woods. Oxylophile to circumneutral. Southern Mo.: Washington, Ste. Genevieve, Scott, Iron, Reynolds, Carter, Ripley, Dent, Shannon, Oregon, Howell, Texas, Wright, Douglas, Ozark, Taney, Greene, Stone, Barry, Newton, and McDonald counties.

**Galium boreale** L. var. **hyssoifolium** (Hoffm.) DC. See Rh. 30: 106-107. 1928.

Northern Bedstraw.

Ledges along high north-facing sandstone and dolomite bluffs. Oxylophile to circumneutral. Southeastern Mo., local: Shannon Co.

**Galium tinctorium** L. Wild Madder.

Swamps and low wet woods and thickets. Circumneutral. General.

**Galium Claytoni** Michx.

Swampy places and wet ground among hummocks in sink-hole ponds. Circumneutral. Southeastern Mo.: Mississippi, Dent, and Texas counties.

**Galium concinnum** T. & G. Shining Bedstraw.

Prairie swales and moist open woods. Circumneutral. General.

**Galium triflorum** Michx. Fragrant Bedstraw.

Rich or moist woods and low open ground. Circumneutral. General.

**Spermacoce glabra** Michx. Smooth Button-weed.

Low wet woods, fields, and borders of ponds, sloughs, and streams. Circumneutral to oxylophile. Central and southern Mo.: Lincoln, St. Charles, St. Louis, Jefferson, Perry, Mississippi, New Madrid, Pemiscot, Dunklin, Butler, Ripley, Reynolds, Oregon, Howell, Gasconade, Maries, Miller, Pulaski, Laclede, Dallas, Henry, Greene, Taney, Barry, Jasper, Newton, and McDonald counties.

**Diodia teres** Walt. Rough Button-weed.

Prairies, glades, fields, and waste ground. Oxylophile to circumneutral. General but commonest south of the Missouri River.

**Diodia virginiana** L. Button-weed.

Low wet woods and borders of streams and bayous. Circumneutral to oxylophile. Southeastern Mo.: Bollinger, Mississippi, New Madrid, Pemiscot, Dunklin, Stoddard, Wayne, Butler, and Ripley counties.

**Mitchella repens** L. Partridge Berry.

Moist sandy banks of streams, sandy bogs, and moist ledges of sandstone



bluffs. Oxylophile. Eastern Mo., mostly south of the Missouri River: Lincoln, Jefferson, Ste. Genevieve, Perry, Madison, New Madrid, Dunklin, Butler, and Ripley counties.

*Cephalanthus occidentalis* L. Button-bush.

Low swampy woods and borders of streams and sloughs. Circumneutral. General and probably in every county.

*Cephalanthus occidentalis* var. *pubescens* Raf.

Swampy woods and borders of bayous. Circumneutral. Southeastern Mo.: Scott, Dunklin, Butler, and Ripley counties.

*Houstonia caerulea* L. Bluets, Innocence.

Moist open woods, open banks, and moist sandstone or granitic ledges. Oxylophile. Southeastern Mo., mostly in the Iron Mountain sub-region: Ste. Genevieve, St. Francois, Iron, Madison, Wayne, Butler, Dunklin, Ripley, Carter, Shannon, Dent, and Texas counties.

*Houstonia patens* Ell. Star Violet.

Dry open ground, glades, and rocky ledges, usually in sandstone or granitic areas. Oxylophile. Eastern and middle Mo., mostly south of the Missouri River: Lincoln, Warren, Jefferson, Franklin, Crawford, Ste. Genevieve, St. Francois, Iron, Madison, Wayne, Butler, Dunklin, Ripley. Carter, Reynolds, Gasconade, Dent, Phelps, Dallas, Douglas, and Wright counties.

*Houstonia minima* Beck. Small Bluets.

Prairies, pastures, glades, rocky ledges, and open soils. Oxylophile to circumneutral. Central and southern Mo. south of a line from Lincoln, Audrain, Randolph, Livingston and Clay counties to Jackson Co.

*Houstonia purpurea* L.

Moist open woods and ledges along bluffs. Oxylophile. Southwestern Mo.: Webster, Ozark, Greene, Stone, Bates, Vernon, Barton, Jasper, and McDonald counties.

*Houstonia tenuifolia* Nutt.

Rocky open woods and glades. Oxylophile. Southeastern Mo., local: Madison Co.

*Houstonia longifolia* Gaertn.

Rocky open woods, glades, and ledges along bluffs. Circumneutral. East-central and southern Mo., south and east of a line drawn from St. Charles, Maries, and Camden counties to Newton Co. This has been confused with *H. ciliolata* which does not occur in Missouri.

*Houstonia lanceolata* (Poir.) Britton.

Rocky open woods. Oxylophile to circumneutral. East-central and southern Mo., scattered: St. Louis, Jefferson, Taney, and Barry counties.

*Houstonia angustifolia* Michx.

Rocky ledges, glades, bluffs, and loess hills. Circumneutral to calciphile. Central, southern, and northwestern Mo.: Macon, Howard, Boone, Montgomery, Warren, St. Charles, St. Louis, Jefferson, Franklin, Washington, St. Francois, Ste. Genevieve, Perry, Cape Girardeau, Bollinger, Madison, Dunklin, Iron, Reynolds, Wayne, Carter, Ripley, Oregon, Howell, Shannon, Texas, Dent, Crawford, Phelps, Gasconade, Osage, Maries, Cole, Pulaski, Miller, Morgan, Benton,

Henry, Camden, Laclede, Dallas, Hickory, Polk, Greene, Douglas, Wright, Webster, Ozark, Taney, Stone, Barry, Cedar, Atchison, Holt, Buchanan, Bates, Jasper, Newton, Christian, and McDonald counties.

***Oldenlandia uniflora* L.**

Moist sandy ground. Oxylophile. Southeastern Mo., local: Dunklin Co.

**Fam. CAPRIFOLIACEAE**

***Lonicera japonica* Thunb. Japanese Honeysuckle.**

Open woods, thickets, and roadsides. Escaped from cultivation; scattered but becoming more widespread: Boone, Pike, St. Charles, St. Louis, Cape Girardeau, Bollinger, Scott, Mississippi, Dunklin, Butler, Shannon, Jackson, Vernon, Barton, and Jasper counties.

***Lonicera sempervirens* L. Trumpet Honeysuckle.**

Thickets and roadsides. Escaped from cultivation in our area. Scattered: St. Louis, Greene, Barton, and Jasper counties.

***Lonicera prolifera* (Kirch.) Rehder, Rh. 12: 166. 1910. Grape Honeysuckle.**

*Lonicera sullivanii* Gray (G), (B & B).

Thickets and wooded bluffs. Calciphile. Northern, central, and western Mo.: Mercer, Sullivan, Schuyler, Adair, Clark, Knox, Shelby, Warren, Boone, Saline, Pettis, Benton, Morgan, Clay, Jackson, Cass, Dade, Lawrence, Greene, and Jasper counties.

***Lonicera dioica* L. var. *glaucescens* (Rydb.) Butters, Minn. Trees & Shrubs. 289. 1912.**

*Lonicera glaucescens* Rydb. (G), (B & B).

Thickets, bluffs, and banks of streams. Circumneutral to calciphile. Northern Mo., south locally in Morgan Co.: Clark, Lewis, Ralls, Atchison, and Morgan counties.

***Lonicera flava* Sims. Yellow Honeysuckle.**

Rocky woods and bluffs. Oxylophile to circumneutral. Southern Mo.: Madison, Iron, Wayne, Reynolds, Carter, Ripley, Shannon, Oregon, Gasconade, Maries, Crawford, Dent, Texas, Howell, Phelps, Pulaski, Camden, Laclede, Dallas, Miller, Hickory, Webster, Wright, Douglas, Ozark, Taney, Stone, Barry, and McDonald counties.

***Lonicera flavida* Cockerell, Rh. 12: 167. 1910.**

Bluffs and rocky ground along streams. Calciphile to circumneutral. Southwestern Mo.: Greene, Taney, Stone, and Barry counties.

***Symphoricarpos orbiculatus* Moench. Buck Brush, Indian Currant.**

Thickets, rocky bluffs, and banks of streams. Circumneutral to oxylophile. General and probably in every county.

***Symphoricarpos occidentalis* Hook. Wolfberry.**

Loess hills, thickets, and open banks. Calciphile. Northern and west-central Mo.: Adair, Nodaway, Atchison, and Jackson counties.

***Triosteum perfoliatum* L. Horse Gentian.**

Open woods and thickets. Circumneutral. General.

*Triosteum aurantiacum* Bicknell var. *illinoense* (Wieg.) Palmer & Steyermark, comb. nov.

*Triosteum illinoense* (Wiegand) Rydb. (R).

*Triosteum perfoliatum* var. *illinoense* Wiegand.

Rich or rocky woods and bluffs. Circumneutral. Eastern and middle Mo.: Putnam, Schuyler, Sullivan, Adair, Monroe, Audrain, Boone, Warren, Carter, Crawford, Texas, Pulaski, Shannon, Morgan, and Dallas counties.

*Triosteum angustifolium* L.

Rocky open woods and ledges. Circumneutral to calciphile. Central and southern Mo.: St. Louis, Jefferson, Franklin, Carter, Ripley, Dent, Shannon, Howell, Texas, Morgan, Polk, Wright, Hickory, Webster, Douglas, Greene, Stone, and McDonald counties.

*Viburnum molle* L. Arrow-wood.

Woods along streams and at base of high bluffs. Calciphile. Central and southern Mo., scattered: Warren, Crawford, Texas, Howell, Benton, Christian, and Stone counties.

*Viburnum molle* f. *leiophyllum* Rehder, Jour. Arnold Arb. 5: 57. 1924.

In similar situations to the typical form. Western Mo., south of the Missouri River, scattered: Benton, Taney, Stone, and McDonald counties.

*Viburnum pubescens* (Ait.) Pursh var. *Deamii* Rehder, Jour. Arnold Arb. 5: 58. 1924.

Low woods along river. Circumneutral. Northeastern Mo., local: Shelby Co.

*Viburnum affine* Bush ex Rehder. See Rh. 20: 14. 1918.

*Viburnum pubescens* of auth., not Pursh (G), (B & B).

Rocky or open woods and bluffs. Circumneutral to calciphile. General but scattered: Mercer, Sullivan, Schuyler, Clark, Shelby, Adair, Boone, Phelps, Carter, Oregon, Shannon, Howell, Benton, Taney, Stone, Barry, and McDonald counties.

*Viburnum affine* var. *hypomalacum* Blake, Rh. 20: 14. 1918.

In similar situations to the typical form. Circumneutral to calciphile. Northeastern and central Mo.: Clark, Lewis, and Morgan counties.

*Viburnum prunifolium* L. Black Haw.

Woods, thickets, and banks of streams. Circumneutral. General and probably in every county.

*Viburnum prunifolium* var. *Bushii* (Ashe) Palmer & Steyermark, comb. nov.

*Viburnum Bushii* Ashe, Jour. Elisha Mitchell Sci. Soc. 40: 48. 1924.

Rocky or open woods and thickets. Circumneutral. Central and southern Mo.: Cape Girardeau, Washington, Crawford, Iron, Reynolds, Carter, Ripley, Shannon, Texas, Dent, Phelps, Laclede, Camden, Boone, Randolph, Cooper, Moniteau, Saline, Lafayette, Clay, Jackson, Henry, Hickory, Polk, Cedar, Lawrence, Barton, and Jasper counties. This has sometimes been confused with *V. Lentago*.

*Viburnum rußdnum* Raf. Black Haw.

Rocky woods, thickets, glades, and banks of streams. Circumneutral to calciphile. Central and southern Mo.: Common south of the Missouri River, and north to Ralls, Monroe, and Clay counties.

**Viburnum Lentago** L. Nannyberry.

Woods and bluffs. Circumneutral. Northeastern Mo., local: Schuyler Co.

**Sambucus canadensis** L. Elderberry.

Open woods and thickets. Circumneutral. General and probably in every county.

**Sambucus canadensis** var. *submollis* Rehder in Sarg. Trees & Shrubs 2: 188. 1911.

In similar situations to the typical form. Circumneutral. General but scattered: Clark, St. Louis, Stoddard, Ripley, Howell, Grundy, Atchison, Jackson, Jasper, Newton, and Barry counties.

**Sambucus pubens** Michx. Red Elderberry.

*Sambucus racemosa* of auth., not L. (G), (B & B).

Rich thickets and rocky banks of streams. Circumneutral. Northeastern Mo., local: Marion Co.

## Fam. VALERIANACEAE

**Valerianella radiata** (L.) Dufr. Beaked Corn Salad.

Prairies, fields, and roadsides. Circumneutral. General.

**Valerianella radiata** var. *leiocarpa* (T. & G.) Krok.

Fields, glades, and rocky open or waste ground. Frequently found with the typical form. General but scattered: Marion, Lincoln, St. Louis, Jefferson, Franklin, Ste. Genevieve, Iron, Wayne, Jackson, Henry, and Jasper counties.

**Valerianella stenocarpa** (Engelm.) Krok.

Rocky prairies and glades. Circumneutral. Scattered: Pike, Jackson, and Jasper counties.

**Valerianella longiflora** (T. & G.) Walp.

Rocky open woods and glades. Circumneutral to oxylophile. Southern Mo.: Madison, Taney, Stone, Barry, and McDonald counties.

## Fam. DIPSACACEAE

**DIPSACUS SYLVESTRIS** Huds. Teasel.

Along roadsides, railroads, and gravel bars of small streams. Indifferent. Central and southern Mo.: Boone, Montgomery, Warren, St. Louis, Jefferson, Franklin, Osage, Clay, Webster, Greene, Barry, Jasper, and Newton counties.

## Fam. CUCURBITACEAE

**Cucurbita foetidissima** HBK. Wild Gourd, Missouri Gourd.

Fields, waste ground, and along railroad and road embankments. Circumneutral to calciphile. Central and southern Mo., scattered: St. Louis, Jefferson, Crawford, Boone, Jackson, and Greene counties.

**Cayaponia grandifolia** (T. & G.) Small.

Low woods and borders of bayous. Circumneutral. Southeastern Mo.: Mississippi and New Madrid counties.

**Sicyos angulatus** L. One-seeded Bur Cucumber.

Low alluvial woods, rich ground at base of bluffs, fields, thickets, and waste ground. Circumneutral to calciphile. Eastern, southern, and central Mo.:

Marion, Boone, Warren, St. Louis, Jefferson, Franklin, Bollinger, Crawford, Dent, Phelps, Pulaski, St. Francois, Mississippi, Reynolds, Texas, Laclede, Clay, Jackson, Johnson, Hickory, Webster, Jasper, and McDonald counties.

*Echinocystis lobata* (Michx.) T. & G. Wild Balsam-apple, Wild Cucumber Vine.

Thickets, roadsides, alluvial and waste ground. Circumneutral. General but scattered: Sullivan, Shelby, Boone, St. Charles, St. Louis, Harrison, Gentry, Dekalb, Jackson, Cass, Johnson, Greene, and Jasper counties.

*Melothria pendula* L.

Rich woods and thickets. Circumneutral. Southern Mo.: Stoddard, Dunklin, Butler, Barry, and McDonald counties.

The watermelon (*Citrullus vulgaris* Schrad.), muskmelon (*Cucumis Melo* L.), cucumber (*Cucumis sativus* L.), pumpkin (*Cucurbita Pepo* L.), and the gourd (*Lagenaria vulgaris* Ser.), are often found growing spontaneously on dumps, waste ground, and along roadsides; but since none of them show any tendency to self-seed or persist they cannot properly be considered as additions to the state flora.

#### Fam. CAMPANULACEAE

*Specularia perfoliata* (L.) A. DC. Venus's Looking-glass.

Prairies, fields, and waste ground. Circumneutral. General.

*Specularia biflora* (R. & S.) Fisch. & Mey.

Fields, roadsides, and waste ground. Circumneutral. Southern Mo.: Bollinger, Dunklin, Ripley, Oregon, Iron, Dent, Wayne, Shannon, Texas, Laclede, Ozark, Christian, Taney, Barry, Jasper, and Newton counties.

*Specularia leptocarpa* (Nutt.) Gray.

Rocky or gravelly open ground and glades. Circumneutral to oxylophile. Central and southwestern Mo.: St. Louis, Boone, Benton, Jackson, Cass, St. Clair, Jasper, and Newton counties.

*Campanula americana* L. Tall Bellflower.

Thickets and borders of woods. Circumneutral. General.

*Campanula rotundifolia* L. Bluebell, Harebell.

Moist ledges along bluffs. Circumneutral to calciphile. Southeastern Mo., local: Shannon Co.

*CAMPANULA RAPUNCULOIDES* L. Creeping Bellflower.

Fields and waste ground. Introduced in Warren Co.

#### Fam. LOBELIACEAE

*Lobelia cardinalis* L. Cardinal Flower.

Low wet woods, and borders of sloughs and streams. Circumneutral. General.

*Lobelia siphilitica* L. Blue Lobelia.

Wet ledges along bluffs, and borders of ponds, sloughs, and small streams. Circumneutral. General.

*Lobelia puberula* Michx.

Moist sandy open ground and open woods. Oxylophile. Southeastern Mo.: Dunklin and Ripley counties.

***Lobelia leptostachys* A. DC.**

Open woods, glades, and prairies. Circumneutral. Central and southern Mo.: Cole, Warren, St. Louis, Jefferson, Franklin, Washington, Crawford, Madison, Iron, Shannon, Dent, Phelps, Pulaski, Miller, Wright, Ozark, Polk, Hickory, Greene, Taney, Barry, Jackson, Jasper, Newton, and McDonald counties.

***Lobelia spicata* Lam.**

Open woods and prairies. Circumneutral. General: Schuyler, Adair, Macon, Linn, Knox, Shelby, Marion, Montgomery, Boone, Callaway, St. Charles, St. Louis, Reynolds, Oregon, Texas, Polk, Saline, Jackson, Bates, Vernon, and Jasper counties.

***Lobelia spicata* var. *hirtella* Gray.**

Prairies and glades. Circumneutral. Western Mo.: Nodaway, Jackson, Bates, Greene, Jasper, and Newton counties.

***Lobelia inflata* L. Indian Tobacco.**

Rocky open woods, thickets, and alluvial ground along streams. Circumneutral. General.

**Fam. COMPOSITAE*****Vernonia crinita* Raf. Ironweed.**

Open woods, thickets, borders of sloughs, and gravel and sand bars along Ozark streams. Circumneutral to oxylophile. Central and southern Mo. south of a line from St. Louis, Warren, Montgomery, Boone, and Pettis counties to Clay Co.

***Vernonia fasciculata* Michx.**

Prairies, meadows, alluvial soils along streams, and waste places in rich moist soil. Circumneutral. General, commonest in northern and central Mo., and apparently absent from most of the Ozark region: Clark, Lewis, Marion, Pike, Lincoln, St. Charles, St. Louis, Butler, Shannon, Boone, Sullivan, Linn, Livingston, Gentry, Nodaway, Holt, Andrew, Buchanan, Platte, Jackson, Cass, Johnson, Henry, and Jasper counties.

***Vernonia altissima* Nutt.**

Thickets, prairies, meadows, and waste ground, common in alluvial and low woods. Circumneutral. General, but commonest in eastern, southern, and central Mo.

***Vernonia altissima* var. *taeniotricha* Blake, Rh. 19: 167. 1917.**

In similar situations to the typical form. General.

***Vernonia missurica* Raf.**

*Vernonia illinoensis* Gleason. (G).

Meadows, prairies, moist open ground along streams, fields and waste places. Circumneutral. General, but commonest in northern, central, and western Mo.

***Vernonia Baldwini* Torr.**

*Vernonia Baldwini* var. *parthenoides* (Daniels) Rickett, Univ. Mo. Stud. Sci. Ser. 6: 81. 1931.

Fields, prairies, meadows, and waste ground. Circumneutral. Eastern, southern, and central Mo. south and east of a line drawn from Marion, Boone, and Saline counties to Jackson Co.



***Vernonia interior* Small.**

Dry prairies, pastures, and waste ground. Circumneutral. General.

***Vernonia interior* var. *Drummondii* (Shuttlw.) Mack. & Bush.**

Prairies and rocky open ground. Circumneutral. Scattered: St. Francois and Jackson counties.

***Vernonia Baldwini* × *crinita*.**

Commonly found with the parent species.\* Rocky woods and glades and along streams. Calciphile to circumneutral. Central and southern Mo.: Jefferson, Washington, Crawford, Reynolds, Ripley, Dent, Shannon, Howell, Oregon, Gasconade, Texas, Dallas, Webster, Polk, Pettis, Stone, Clay, and Jasper counties.

***Vernonia altissima* × *missurica*.**

Occasionally found with the parent species. Scattered: Gentry, Dekalb, Boone, Crawford, Ripley, and Laclede counties.

***Vernonia crinita* × *fasciculata*.**

Rarely found with the parent species. St. Louis Co.

***Vernonia crinita* × *interior*.**

Rarely found with the parent species. Phelps Co.

***Vernonia crinita* × *missurica*.**

Occasionally found with the parent species. Crawford and Dent counties.

***Vernonia fasciculata* × *interior*.**

Occasionally found with the parent species. Northwestern Mo.: Buchanan and Andrew counties.

***Vernonia interior* × *missurica*.**

Sometimes found with the parent species. Clark, St. Louis, and Crawford counties.

***Vernonia altissima* × *crinita*.**

Rarely found with the parent species. Crawford, Cedar, and Hickory counties.

***Elephantopus carolinianus* Willd. Elephant's-foot.**

Open woods and thickets. Circumneutral. General.

***Eupatorium falcatum* Michx. See Rh. 22: 62-68. 1920.**

*Eupatorium purpureum* of auth. in part, not L. (G), (B & B).

*Eupatorium Holsingeri* Rydb. (R).

Moist ground, thickets, and margins of streams and sloughs. Circumneutral. General and common. This has been confused with *E. maculatum*, which is of more northern range and does not reach Mo.

***Eupatorium purpureum* L. See Rh. 22: 62-67. 1920.**

Low open woods and moist open ground. Circumneutral. Northern and eastern Mo.: Livingston, Marion, Butler, and Scott counties.

***Eupatorium cuneifolium* Willd. var. *semiserratum* (DC.) Fernald & Griscom, Rh. 37: 179. 1935.**

*Eupatorium semiserratum* DC. (G).

Swamps, wet prairies, and open woods. Circumneutral. Southeastern Mo.: Dunklin and Butler counties, and also collected in St. Louis Co. where perhaps introduced.

**Eupatorium serotinum** Michx.

Prairies, fields, thickets, and waste ground. Circumneutral. General.

**Eupatorium sessilifolium** L. Upland Boneset.

Rocky open woods, bluffs, and banks. Circumneutral to calciphile. Eastern, central, and southern Mo.: Marion, Ralls, Boone, Jefferson, St. Francois, Iron, Reynolds, Crawford, Shannon, Texas, Pulaski, Camden, Laclede, Greene, Taney, Barry, and McDonald counties.

**Eupatorium altissimum** L.

Prairies, rocky hills, and thickets. Circumneutral. General.

**Eupatorium perfoliatum** L. Boneset, Thoroughwort.

Low wet woods, and along sloughs and prairie streams. Oxylophile. General.

**Eupatorium perfoliatum** var. **cuneatum** Engelm.

Occasionally found with the typical form. Scattered: Marion, Ralls, St. Louis, Perry, Jackson, and Greene counties.

**Eupatorium urticaefolium** Reichenb. White Snakeroot.

Rich woods, thickets, and along base of bluffs. Circumneutral. General.

**Eupatorium urticaefolium** var. **villicaulle** Fernald.

Occasionally found with the typical form. Scattered: Putnam, Boone, St. Louis, Jefferson, Oregon, Ozark, Greene, Christian, Lafayette, and Clinton counties.

**Eupatorium incarnatum** Walt.

Low woods and swamps. Circumneutral. Southeastern Mo.: Dunklin Co.

**Eupatorium coelestinum** L. Mist-flower.

Swampy woods, and wet banks of streams and bayous. Circumneutral. Eastern, central, and southern Mo., south and east of a line from Shelby, Boone, and Saline counties to Jackson Co.

**Mikania scandens** (L.) Willd. Climbing Hemp-weed.

Swampy woods and borders of bayous. Circumneutral. Southeastern Mo.: Scott, Mississippi, New Madrid, Stoddard, Dunklin, and Butler counties.

**Brickellia grandiflora** (Hook.) Nutt. Tassel Flower.

Rocky woods and along shaded bluffs. Calciphile to circumneutral. Central and southern Mo.: St. Louis, Reynolds, Shannon, Texas, Osage, Phelps, Pulaski, Miller, Camden, Ozark, Taney, Stone, Henry, and Barry counties.

**Kuhnia eupatorioides** L. False Boneset.

Rocky open woods, prairies, and thickets. Circumneutral to oxylophile. General.

**Kuhnia eupatorioides** var. **corymbulosa** T. & G.

Occasionally found with the typical form. Scattered: Carroll, Boone, Scott, Atchison, Holt, Jackson, Henry, and Greene counties.

**Kuhnia eupatorioides** var. **angustifolia** Raf.

Rocky ledges and glades. Circumneutral to oxylophile. Central and southern Mo.: St. Francois, Dent, Shannon, Oregon, Phelps, Maries, Pulaaki, Laclede, Greene, Shannon, Texas, Ozark, Barry, Jackson, Jasper, and McDonald counties.

**Liatris squarrosa** Willd. Blazing Star.

*Liatris hirsuta* Rydb. (R).

Rocky open woods and glades, and ledges along bluffs. Oxylophile to circumneutral. General, but commonest in the Ozark region: Mercer, Linn, Adair, Macon, Randolph, Boone, Monroe, Audrain, Pike, Montgomery, Lincoln, St. Louis, Stoddard, Iron, Reynolds, Shannon, Dent, Crawford, Phelps, Pulaski, Laeude, Dallas, Saline, Pettis, Henry, Hickory, Greene, Christian, Stone, Barry, Jackson, Cass, Vernon, Jasper, Newton, and McDonald counties.

*Liatris squarrosa* var. *intermedia* (Lindl.) DC.

*Liatris glabrata* Rydb., in part (R).

Rocky prairies and glades. Oxylophile to circumneutral. Eastern, central, and southern Mo.: Macon, Boone, St. Louis, Crawford, Dunklin, Iron, Shannon, Dent, Texas, Greene, Christian, Stone, Taney, Jackson, Barry, and McDonald counties.

*Liatris cylindracea* Michx.

*Liatris glabrata* Rydb., in part (R).

Rocky open woods, prairies, and glades. Circumneutral. Eastern, central, and southern Mo.: Lewis, Pike, Warren, Montgomery, St. Louis, Jefferson, Franklin, Washington, Ste. Genevieve, Reynolds, Carter, Shannon, Oregon, Dent, Crawford, Maries, Phelps, Pulaski, Texas, Howell, Wright, Douglas, Ozark, Taney, Greene, Stone, Barry, and McDonald counties.

*Liatris acidota* Engelm. & Gray.

*Liatris punctata* of auth., not Hook. (G), (B & B).

*Lacinaria angustifolia* Bush.

Loess hills, prairies, glades, and open woods. Circumneutral to calciphile. Western Mo.: Atchison, Holt, Jackson, Barry, and Taney counties.

*Liatris scariosa* Willd. Gay Feather.

*Liatris sphaeroidea* Michx. (R).

*Liatris aspera* (Michx.) Greene (R).

Rocky prairies, meadows, glades, and bald knobs. Calciphile to circumneutral. General.

*Liatris pycnostachya* Michx.

Prairies, meadows, and rocky open ground. Circumneutral. General.

*Liatris spicata* (L.) Willd.

Rocky open woods and prairies. Circumneutral. Southeastern Mo., local: Oregon Co.

*Grindelia squarrosa* (Pursh) Dunal. Gum Plant.

Prairies, low alluvial and waste ground. Calciphile to circumneutral. Eastern and central Mo., scattered: Marion, St. Louis, Perry, Carroll, and Jackson counties.

*Grindelia squarrosa* var. *serrulata* (Rydb.) Steyermark, Ann. Mo. Bot. Gard. 21: 227, 482. 1934.

Cultivated fields and waste ground, introduced from farther west. Circumneutral to calciphile. Clark and Boone counties.

*Grindelia squarrosa* var. *nuda* (Wood) Gray.

Sometimes found with the typical form. St. Louis and Jackson counties.

*Grindelia lanceolata* Nutt.

Rocky prairies, glades, and bald knobs, and also sometimes introduced along

- railways or in fields. Calciphile. Central and southern Mo.: St. Louis, Jefferson, Butler, Camden, Wright, Douglas, Ozark, Henry, Greene, Taney, Stone, Barry, Vernon, Barton, Jasper, Newton, and McDonald counties.
- Grindella lanceolata* f. *latifolia* Steyermark, Ann. Mo. Bot. Gard. 21: 515. 1934.  
Rarely occurring with the species. Southwestern Mo., local: Stone Co.
- Gutierrezia dracunculoides* (DC.) Blake, Contr. U. S. Nat. Herb. 22: 592. 1924.  
August Flower.  
*Amphiachyris dracunculoides* (DC.) Nutt. (G), (B & B).  
Dry upland prairies. Circumneutral to calciphile. Western Mo.: Atchison, Jackson, Cass, Cedar, Greene, Jasper, Newton, and McDonald counties, and also introduced in St. Louis Co.
- Heterotheca subaxillaris* (Lam.) Britton & Rusby.  
Loess hills and waste ground. Calciphile to circumneutral. Northwestern Mo.: Atchison Co., and also introduced in Jackson Co.
- Chrysopsis camporum* Greene. Golden Aster.  
*Chrysopsis villosa* of auth., not Nutt. (G), (B & B).  
Sandy open ground. Oxylophile. Eastern Mo., south of the Missouri River: St. Louis, Franklin, Ste. Genevieve, Scott, Mississippi, Stoddard, Dunklin, and Wayne counties.
- Chrysopsis pilosa* Nutt.  
Rocky or sandy prairies and open banks. Oxylophile. Southern Mo.: Dunklin and Jasper counties.
- Chrysopsis Berlandieri* Greene.  
*Chrysopsis villosa* var. *canescens* (T. & G.) Gray.  
Loess hills. Calciphile to circumneutral. Northwestern Mo.: Holt Co.
- Aplopappus ciliatus* (Nutt.) DC.  
Prairies, glades, open alluvial and waste ground. Calciphile. Western Mo.: Clay, Jackson, and Stone counties.
- Solidago petiolaris* Ait.  
Rocky prairies, thickets, and dry open woods. Circumneutral to oxylophile. Central and southern Mo.: St. Louis, Jefferson, Franklin, Ste. Genevieve, St. Francois, Madison, Iron, Reynolds, Butler, Shannon, Dent, Crawford, Gasconade, Wright, Taney, Greene, Stone, Jackson, Jasper, and Newton counties.
- Solidago petiolaris* var. *Wardii* (Britton) Fernald.  
Rocky open woods and thickets. Oxylophile. East-central and southern Mo.: St. Louis, Jefferson, Crawford, Callaway, Montgomery, Boone, Cole, Phelps, Pulaski, Henry, Greene, Stone, Jasper, Newton, and McDonald counties.
- Solidago caesia* L. Blue-stemmed Goldenrod.  
Rocky woods, bluffs, and ledges. Circumneutral to oxylophile. Southern Mo.: Perry, Cape Girardeau, Bollinger, Iron, Wayne, Ripley, Reynolds, Shannon, Oregon, Texas, Howell, Douglas, Ozark, and Barry counties.
- Solidago latifolia* L.  
Rich rocky woods and shaded bluffs. Circumneutral. General but commonest in central and southern Mo.: Putnam, Marion, Ralls, Monroe, Boone, Callaway, Warren, Lincoln, St. Charles, St. Louis, Jefferson, Franklin, Cape Girardeau,

Bollinger, Madison, Iron, Wayne, Carter, Shannon, Oregon, Morgan, Camden, Dallas, Ozark, Taney, Stone, Barry, Jackson, Lafayette, Pettis, Hickory, Greene, and Jasper counties.

*Solidago Lindheimeriana* Scheele.

Rocky woods and bluffs. Circumneutral. East-central and southern Mo.: Jefferson, Franklin, Carter, Barry, and McDonald counties.

*Solidago hispida* Muhl.

Rocky open woods and ledges. Oxylophile. East-central and southern Mo.: St. Louis, Jefferson, Franklin, Gasconade, Crawford, Ste. Genevieve, Bollinger, Madison, Iron, Reynolds, Wayne, Carter, Ripley, Oregon, Shannon, Dent, Texas, Howell, Douglas, Ozark, Taney, Stone, Barry, Jasper, Newton, and McDonald counties.

*Solidago speciosa* Nutt.

Rocky open woods, thickets, prairies, and meadows. Circumneutral. General but scattered.

*Solidago speciosa* var. *angustata* T. & G.

Frequently found with the typical form. Southern and central Mo. and locally north in Worth, Putnam, and Buchanan counties.

*Solidago patula* Muhl.

Swampy open ground. Circumneutral. Southeastern Mo.: Bollinger, Iron, and Scott counties.

*Solidago arguta* Ait.

Rocky open woods and bluffs. Oxylophile to circumneutral. Southern Mo.: Ste. Genevieve, Madison, Reynolds, Carter, Shannon, Oregon, Texas, Howell, Ozark, Taney, Barry, Jasper, Newton, and McDonald counties.

*Solidago arguta* var. *Boottii* (Hook.) Palmer & Steyermark, comb. nov.

*Solidago Boottii* Hook. (G), (B & B).

Dry open woods and thickets. Circumneutral to oxylophile. Southern Mo.: Ste. Genevieve, Reynolds, Ripley, Shannon, Texas, Howell, Douglas, Ozark, Barry, Jasper, Newton, and McDonald counties.

*Solidago juncea* Ait. Early Goldenrod.

Open woods, thickets, and along prairie streams. Circumneutral to oxylophile. Central and southern Mo.: Boone, St. Louis, Scott, Iron, Carter, Shannon, Taney, Barry, Newton, and McDonald counties.

*Solidago juncea* var. *scabrella* (T. & G.) Gray.

Occasionally found with the typical form. Southwestern Mo.: Taney, Barry, and Newton counties.

*Solidago suaveolens* Schoepf. See Rh. 21: 70. 1919. Fragrant Goldenrod.

*Solidago odora* Ait. (G), (B & B).

Rocky or sandy open woods and thickets. Oxylophile. Southeastern Mo.: Scott, Dunklin, Carter, and Ripley counties.

*Solidago microphylla* Engelm.

Rocky woods and bluffs. Circumneutral. Southern Mo., local: Ozark Co.

*Solidago ulmifolia* Muhl.

Open woods, thickets, and alluvial banks. Circumneutral. General.

***Solidago rugosa* Mill. Rough-leaved Goldenrod.**

Rocky prairies, glades, and open woods along streams. Circumneutral to oxylophile. Central and southern Mo.: St. Louis, Jefferson, Ste. Genevieve, Scott, Iron, Wayne, Butler, Dunklin, Texas, Howell, Jackson, Greene, Jasper, and Newton counties.

***Solidago rugosa* var. *aspera* (Ait.) Fernald, Rh. 17: 7. 1915.**

*Solidago aspera* Ait. (G).

In similar situations to the typical form. East-central and southeastern Mo.: Lincoln, Perry, Iron, Wayne, Butler, Dunklin, and Shannon counties.

***Solidago glaberrima* Martens.**

*Solidago missouriensis* of auth., not Nutt. (G).

Open woods, thickets, and prairies. Circumneutral. General.

***Solidago glaberrima* var. *moritura* (Steele) Palmer & Steyermark, comb. nov.**

*Solidago moritura* Steele (R).

Thickets, prairies, limestone hills, and loess mounds. Calciphile to circumneutral. Western Mo.: Atchison, Holt, Henry, and Vernon counties.

***Solidago Gattereri* Chapm.**

Rocky open ground, glades, and bald knobs. Calciphile. East-central and southern Mo.: St. Louis, Jefferson, Franklin, Camden, Dallas, Ozark, Taney, Barry, and McDonald counties.

***Solidago nemoralis* Ait. Gray Goldenrod.**

Open woods, thickets, fields, prairies, and waste ground. Oxylophile. General.

***Solidago nemoralis* var. *longipetiolata* (Mack. & Bush) Palmer & Steyermark, comb. nov.**

*Solidago longipetiolata* Mack. & Bush (R).

Rocky open woods, glades, prairies, and loess hills. Oxylophile to circumneutral. General but scattered: Clark, Boone, St. Louis, Jefferson, St. Francois, Iron, Shannon, Maries, Camden, Worth, Atchison, Holt, Buchanan, Jackson, Jasper, and Barry counties.

***Solidago radula* Nutt.**

Rocky woods, bluffs, and glades. Circumneutral to calciphile. Eastern, central, and southern Mo. south and east of a line drawn from Marion, Monroe, Saline, and Henry counties to Cedar and Jasper counties.

***Solidago altissima* L.**

Fields, prairies, thickets, and waste ground. Circumneutral. General. This is one of the commonest goldenrods in the state, and it has often been confused with *Solidago canadensis*, the typical var. of which is not found in Mo.

***Solidago altissima* var. *procera* (Ait.) Fernald.**

Occasionally found with the typical form.

***Solidago canadensis* L. var. *glivocanescens* Rydb.**

Fields and prairies. Circumneutral. Scattered: Linn, Pike, Boone, Saline, Jackson, and Greene counties.

***Solidago serotina* Ait.**

Moist open woods and thickets, prairie swales, and banks of streams. Circumneutral. General.



***Solidago serotina* var. *gigantea* (Ait.) Gray.**

Occasionally found with the typical form. Scattered: St. Louis, Dunklin, Boone, Jackson, and Cass counties.

***Solidago rigida* L.**

Prairies, thickets, and rocky open ground. Circumneutral to calciphile. General.

***Solidago Drummondii* T. & G.**

Dry limestone or dolomite bluffs and ledges. Calciphile. Eastern and middle Mo., mostly south of the Missouri River: Monroe, Boone, Callaway, Montgomery, St. Charles, St. Louis, Jefferson, Franklin, Gasconade, Crawford, Washington, St. Francois, Ste. Genevieve, Perry, Bollinger, Madison, Iron, Reynolds, Carter, Oregon, Shannon, Dent, Phelps, Moniteau, Pulaski, Laclede, Texas, Howell, Douglas, and Ozark counties.

***Solidago graminifolia* (L.) Salisb. Flat-topped Goldenrod.**

*Euthamia glutinosa* Rydb. (R).

Fields and prairies. Circumneutral. General and common.

***Solidago gymnospermoides* (Greene) Fernald.**

*Euthamia gymnospermoides* Greene (B & B).

Rocky or upland prairies. Circumneutral to calciphile. Middle and western Mo.: Audrain, Boone, Miller, Pettis, Greene, Daviess, Dekalb, Jackson, Cass, Vernon, Barton, Jasper, Newton, and McDonald counties.

***Solidago leptoccephala* T. & G.**

Sandy open ground. Oxylophile. Southeastern Mo.: Mississippi, Dunklin, and Butler counties.

***Bellis integrifolia* Michx. Western Daisy.**

Rocky open woods and glades. Calciphile. Southwestern Mo.: Taney and McDonald counties.

***Chaetopappa asteroides* DC.**

Rocky open woods, prairies, and glades. Oxylophile. Southwestern Mo.: Vernon, Jasper, and Newton counties.

***Boltonia asteroides* (L.) L'Her. False Starwort.**

Moist open woods and thickets. Circumneutral. General. Forms of this have been confused with *Boltonia diffusa*, which is not known in Mo.

***Boltonia asteroides* var. *decurrens* (T. & G.) Engelm.**

Frequently found with the typical form. General but scattered.

***Boltonia latisquama* Gray.**

Prairie swales and borders of streams and sloughs. Circumneutral. Northern, central, and western Mo.: Knox, Lewis, Shelby, Monroe, Ralls, Pike, Audrain, Ripley, Boone, Randolph, Macon, Linn, Carroll, Livingston, Chariton, Caldwell, Jackson, Lafayette, Pettis, Cass, Henry, Vernon, Greene, and Jasper counties.

***Aster paludosus* Ait.**

Prairies and along railroads. Circumneutral to oxylophile. Southwestern Mo. and locally east in Marion Co. where probably introduced: Marion, Barton, Jasper, Newton, and Barry counties.

**Aster furcatus** Burgess.

Shaded rocky banks and bluffs of streams. East-central and southern Mo.: Jefferson, Shannon, and Texas counties.

**Aster oblongifolius** Nutt.

Rocky prairies, open slopes, and glades. Calciphile to circumneutral. General.

**Aster oblongifolius** var. **rigidulus** Gray.

Frequently found with the typical form. Scattered: St. Louis, Jefferson, Atchison, Holt, Henry, Greene, Ozark, Barry, Jasper, and McDonald counties.

**Aster novae-angliae** L. New England Aster.

Thickets, prairie swales, and moist open ground along streams. Circumneutral. General but scattered.

**Aster sericeus** Vent.

Rocky prairies, glades, and loess hills. Calciphile to circumneutral. Central, southern, and northwestern Mo.: St. Louis, Jefferson, Washington, Iron, Dent, Shannon, Oregon, Texas, Howell, Ozark, Camden, Dallas, Hickory, Cedar, Greene, Taney, Stone, Barry, Atchison, Holt, Jackson, Cass, and McDonald counties.

**Aster patens** Ait. Purple Daisy.

Rocky open woods, thickets, and glades. Circumneutral to oxylophile. General.

**Aster patens** var. **gracilis** Hook.

Occasionally found with the typical form. Jasper and McDonald counties.

**Aster anomalus** Engelm.

Rocky open woods and thickets. Oxylophile to circumneutral. Eastern, central, and southern Mo., south and east of a line from Lewis, Boone, and Henry to Jasper Co.

**Aster azureus** Lindl. Blue Devil.

Rocky open woods, borders of prairies, and glades. Calciphile to circumneutral. General.

**Aster azureus**  $\times$  **laevis**.

Sometimes occurring with the parent species. Prairies and dry open ground. Circumneutral. Scattered in northern and central Mo.: Monroe, Adair, Randolph, Putnam, Daviess, and Caldwell counties.

**Aster cordifolius** L. Heart-leaved Aster.

Moist alluvial woods, and along shaded bluffs. Circumneutral to oxylophile. General.

**Aster cordifolius** var. **polycephalus** Porter.

Occasionally found with the typical form. Boone Co.

**Aster sagittifolius** Wedemeyer.

Rocky woods and glades. Circumneutral to oxylophile. General.

**Aster Drummondii** Lindl.

*Aster hirtellus* Lindl. (R).

Rocky open woods and thickets. Circumneutral. General.

**Aster turbinellus** Lindl.

Rocky open woods, thickets, and glades. Circumneutral to oxylophile. Eastern, central, and southern Mo., south and east of a line from Putnam, Macon, Pettis, and Henry counties to Jasper Co.

***Aster laevis* L.**

Rocky open woods, thickets, glades, prairies, and loess hills. Circumneutral to calciphile. General.

***Aster concinnus* Willd.**

Rocky open woods, prairies, and glades. Calciphile to circumneutral. Central and southern Mo., scattered: St. Louis, Jefferson, Franklin, Maries, Shannon, Ozark, Cooper, Jackson, Jasper, and Newton counties.

***Aster polyphyllus* Willd.**

Rocky open ground. Circumneutral to calciphile. East-central Mo., local: St. Louis Co.

***Aster pilosus* Willd. See Rh. 32: 139. 1930. White Heath Aster.**

*Aster ericoides* var. *villosus* T. & G. (G).

*Aster ericoides* of auth. in part, not L. (B & B).

Fields, prairies, and rocky open ground. Circumneutral to oxylophile. General.

***Aster pilosus* var. *demotus* Blake, Rh. 32: 139. 1930.**

*Aster ericoides* of auth., not L. (G), (B & B).

Rocky open woods, thickets, and prairies. Circumneutral to oxylophile. General.

***Aster pilosus* var. *platyphyllus* (T. & G.) Blake, Rh. 32: 139. 1930.**

*Aster ericoides* var. *platyphyllus* T. & G. (G).

Occasionally found with the typical form. Scattered: Ralls, St. Louis, and Jackson counties.

***Aster ericoides* L. See Rh. 32: 138. 1930, and Rh. 30: 227. 1928.**

*Aster multiflorus* Ait. (G), (B & B).

*Aster multiflorus* var. *exiguus* Fernald (G).

Rocky open woods and prairies. Circumneutral. Northern, central, and western Mo., apparently absent from most of the Ozark region: Clark, Lewis, Marion, Ralls, Pike, Lincoln, St. Charles, St. Louis, Warren, Montgomery, Audrain, Monroe, Shelby, Knox, Scotland, Schuyler, Adair, Macon, Randolph, Boone, Howard, Chariton, Linn, Sullivan, Putnam, Mercer, Grundy, Livingston, Carroll, Saline, Cooper, Morgan, Pettis, Greene, Henry, Johnson, Caldwell, Daviess, Harrison, Worth, Gentry, Dekalb, Clinton, Clay, Jackson, Bates, Jasper, Platte, Buchanan, Andrew, Nodaway, Holt, and Atchison counties.

***Aster ericoides* var. *prostratus* (Ktze.) Blake, Rh. 32: 138. 1930.**

*Aster exiguus* (Fernald) Rydb., not *Aster multiflorus* var. *exiguus* Fernald.

*Aster multiflorus* var. *pansus* Blake, Rh. 30: 227. 1928.

Prairies, dry open ground, along railroads, and sandy or gravelly ground along streams. Circumneutral. Northern, central, and western Mo.: Knox, Macon, Marion, Lincoln, St. Louis, Cole, Montgomery, Randolph, Saline, Linn, Atchison, Jackson, and Jasper counties.

***Aster parviceps* (Burgess) Mack. & Bush. See Rh. 11: 59. 1909.**

*Aster depauperatus* var. *parviceps* (Burgess) Fernald (G).

Prairies and open woods. Eastern, central, and southwestern Mo.: Marion, Ralls, Pike, Audrain, St. Louis, Bollinger, Warren, Montgomery, Callaway, Boone, Jackson, and Jasper counties.

***Aster parviceps* × *pilosus* var. *demotus*.**

Sometimes occurring with the parent species. Circumneutral. Northern Mo.: Knox, Marion, Putnam, and Grundy counties.

***Aster amethystinus* Nutt.**

Prairies. Circumneutral. Central Mo., local: Randolph Co. Probably a hybrid between *Aster praealtus* and *Aster novae-angliae* with which species it was found growing.

***Aster commutatus* (T. & G.) Gray. White Prairie Aster.**

Fields and prairies. Circumneutral. Scattered: St. Louis and Jackson counties.

***Aster vimineus* Lam. var. *subdumosus* Wiegand, Rh. 30: 171. 1928. Frost Flower.**

*Aster vimineus* of auth. in part (G), (B & B).

Open woods and prairie swales. Circumneutral. General but scattered: Monroe, Warren, St. Louis, Jefferson, Scott, Stoddard, Dunklin, Butler, Wayne, Audrain, Randolph, Linn, Henry, Greene, and Jasper counties. This has been confused with *Aster dumosus* and varieties which are not known to occur in Missouri.

***Aster angustus* (Lindl.) T. & G.**

Open ground, loess hills. Circumneutral to calciphile. Northwestern Mo., local: Atchison Co.

***Aster pantotrichus* Blake, Jour. Wash. Acad. Sci. 21: 327. 1931.**

*Aster missouriensis* Britton, not Ktze. (B & B).

*Aster lateriflorus* var. *thyrsoides* (Gray) Sheldon (G), in part.

Rocky open woods. Circumneutral to oxylophile. Eastern, central, and southern Mo.: Ralls, Pike, Lincoln, St. Louis, Ste. Genevieve, Iron, Taney, Boone, and Jackson counties.

***Aster lateriflorus* (L.) Britton var. *pendulus* (Ait.) Burgess. See Rh. 30: 173. 1928.**

*Aster lateriflorus* of auth. in part (G), (B & B).

Low wet woods and borders of ponds, sloughs, and swales. Circumneutral. General and common. Typical *Aster lateriflorus* is of more northern and eastern range and does not reach Missouri.

***Aster paniculatus* Lam. Tall White Aster.**

Low wet woods and prairie swales. Circumneutral. General.

***Aster paniculatus* var. *bellidiflorus* (Willd.) Burgess.**

Occasionally found with the typical form. Boone and Jackson counties.

***Aster paniculatus* var. *simplex* (Willd.) Burgess.**

Occasionally found with the typical form. Boone, Randolph, and Jasper counties.

***Aster praealtus* Poir. See Rh. 35: 21. 1933. Willow-leaved Aster.**

*Aster salicifolius* Ait., in part (G), (B & B).

Wet meadows, prairies, roadsides, and borders of small streams. Circumneutral. General.

***Aster praealtus* var. *subasper* (Lindl.) Wiegand, Rh. 35: 24. 1933.**

*Aster salicifolius* var. *subasper* (Lindl.) Gray (G).

Occasionally found with the typical form. Mississippi, Boone, and Jackson counties.

*Aster interior* Wiegand, Rh. 35: 35, 312. 1933. Michaelmas Daisy.

*Aster Tradescanti* of auth. in part, not L. (G), (B & B).

Low wet woods, thickets, and prairie swales. Circumneutral. General.

*Aster linarifolius* L.

Rocky open woods and glades. Oxylophile. East-central and southern Mo.: St. Louis, Jefferson, Franklin, Ste. Genevieve, Perry, Bollinger, Madison, Iron, Wayne, Ripley, Carter, Reynolds, Oregon, Dent, Shannon, Crawford, Maries, Phelps, Pulaski, Laclede, Texas, Howell, Douglas, Ozark, Greene, Taney, Barry, Jasper, Newton, and McDonald counties.

*Aster ptarmicoides* T. & G.

Rocky open woods and glades. Calciphile. Central and southern Mo.: Jefferson, Washington, Crawford, Dent, Iron, Shannon, Phelps, Pulaski, Jackson, Greene, Barry, Newton, and McDonald counties.

*Aster lateriflorus* var. *pendulus* × *pantotrichus*.

Occasionally found with the parent species. St. Louis Co.

*Aster lateriflorus* var. *pendulus* × *praealtus*.

Occasionally found with the typical form. St. Louis Co.

*Erigeron pulchellus* Michx. Robin's Plantain.

Rocky open woods and thickets. Oxylophile to circumneutral. General.

*Erigeron philadelphicus* L.

Fields, open woods, and waste ground. Circumneutral. General.

*Erigeron annuus* (L.) Pers. Daisy Fleabane.

Fields, prairies, and waste ground. Indifferent. General.

*Erigeron ramosus* (Walt.) BSP.

Rocky prairies, fields, and glades. Calciphile to circumneutral. General.

*Erigeron ramosus* var. *Beyrichii* (T. & G.) Trelease.

Occasionally found with the typical form. Jasper Co.

*Erigeron tenuis* T. & G.

Prairies, fields, and waste ground. Circumneutral. Central and southern Mo., scattered: St. Louis, Jasper, Newton, and McDonald counties.

*Erigeron canadensis* L.

Fields, roadsides, and waste ground. Indifferent. General and common.

*Erigeron divaricatus* Michx. Dwarf Fleabane.

Prairies, fields, glades, and waste ground. Oxylophile. General.

*Pluchea foetida* (L.) DC. Marsh Fleabane.

Swampy open woods and borders of bayous. Circumneutral. Southeastern Mo.: Butler Co.

*Pluchea petiolata* Cass.

Low wet woods, swamps, and borders of sloughs and bayous. Circumneutral. Southern Mo.: Bollinger, Scott, Mississippi, New Madrid, Pemisecot, Dunklin, Butler, Wayne, Ripley, Oregon, Howell, Taney, Barry, and Jasper counties, and also introduced in Jackson Co.

*Antennaria plantaginifolia* (L.) Richards. Ladies' Tobacco, Pussy's Toes.

Rocky open woods and thickets. Oxylophile. General.

***Antennaria fallax* Greene. Indian Tobacco.**

Rocky open woods, glades, and prairies. Oxylophile. General. This is a common species in Missouri, and it has often been confused with *A. plantaginifolia*.

***Antennaria calophylla* Greene.*****Antennaria ampla* Bush.**

Rocky open woods and prairies. Oxylophile to circumneutral. General but scattered: Shelby, Marion, Audrain, Shannon, Ripley, Greene, Christian, Taney, Jasper, and Newton counties.

***Antennaria neglecta* Greene.*****Antennaria longifolia* Greene.**

Prairies and meadows. Circumneutral. Northern, central, and western Mo.: Schuyler, Scotland, Knox, Shelby, Lewis, Marion, Ralls, Pike, Lincoln, Audrain, Boone, Randolph, Macon, Adair, Sullivan, Linn, Mercer, Grundy, Davies, Platte, Moniteau, Morgan, Pettis, Hickory, Henry, Cedar, Jackson, Greene, and Jasper counties.

***Anaphalis margaritacea* (L.) Benth. & Hook. Pearly Everlasting.**

Fields and waste ground. Introduced in Boone Co.

***Gnaphalium purpureum* L. Cudweed.**

Fields, prairies, and thickets. Circumneutral to oxylophile. General.

***Gnaphalium obtusifolium* L. See Rh. 20: 71. 1918. Everlasting.*****Gnaphalium polycephalum* Michx. (G).**

Rocky prairies, fields, and thickets. Circumneutral to oxylophile. General.

***Gnaphalium obtusifolium* var. *micradenum* Weatherby, Rh. 25: 22. 1923.**

Rocky open woods. Oxylophile. Southeastern Mo., eastern Ozark region: Ste. Genevieve and Shannon counties.

***INULA HELENIUM* L. Elecampane.**

Wet open ground and waste places. Scattered: Monroe, Boone, and Jackson counties, and also reported from Greene Co.

***Polymnia canadensis* L.**

Rich rocky woods and talus slopes. Circumneutral to calciphile. Eastern, central, and southern Mo., south and east of a line drawn from Marion, Warren, and Boone counties to Jackson Co.

***Polymnia canadensis* var. *radiata* Gray.**

Commonly found with the typical form. Scattered in eastern, central, and southern Mo.: Clark, Marion, St. Louis, Carter, Dent, Phelps, Pulaski, Shannon, Taney, Laclede, Montgomery, Boone, Jackson, and McDonald counties.

***Polymnia Uvedalia* L. var. *genuina* Blake, Rh. 19: 47. 1917. Leaf-cup.**

Rich woods and along bluffs. Calciphile. Scattered in central and southern Mo.: Boone and Barry counties.

***Polymnia Uvedalia* var. *densipilis* Blake, Rh. 19: 48. 1917.**

Rich woods, thickets, and along bluffs. Calciphile to circumneutral. Central and southern Mo.: Boone, St. Louis, Jefferson, Dunklin, Butler, Ripley, Shannon, Ozark, Barry, Jasper, Newton, and McDonald counties.

***Silphium laciniatum* L. Compass Plant.**

Prairies and glades. Circumneutral to calciphile. General.



***Silphium terebinthinaceum* Jacq.** Prairie Dock.

Prairies, glades, and bald knobs. Calciphile to circumneutral. Eastern, central, and southern Mo., south and east of a line drawn from Marion, Boone, Benton and Greene counties to Barry Co.

***Silphium Asteriscus* L.** Starry Rosin-weed.

Rocky open woods and glades. Circumneutral to oxylophile. Southern Mo.: Dunklin, Carter, Ripley, Oregon, Shannon, Texas, Howell, Douglas, Ozark, Stone, and Barry counties.

***Silphium integrifolium* Michx.** Rosin-weed.

Rocky open woods, glades, and prairies. Circumneutral to calciphile. General.

***Silphium perfoliatum* L.** Cup Plant.

Moist prairies, thickets, and borders of streams and ponds. Circumneutral. General.

***Berlandiera texana* DC.**

Rocky open woods and thickets. Circumneutral to calciphile. Southern Mo.: Phelps, Pulaski, Carter, Dent, Shannon, Oregon, Howell, Douglas, Ozark, Taney, Stone, Greene, Lawrence, Barry, Jasper, Newton, and McDonald counties.

***Engelmannia pinnatifida* T. & G.**

Waste ground and along railroads. Introduced from farther west. Jackson Co.

***Parthenium integrifolium* L.**

Rocky woods, thickets, and glades. Calciphile to circumneutral. General.

***Parthenium hispidum* Raf.**

*Parthenium repens* Eggert (G).

Prairies and glades. Calciphile. Central and southern Mo.: St. Louis, Jefferson, Franklin, St. Francois, Iron, Washington, Crawford, Dent, Shannon, Oregon, Texas, Phelps, Maries, Pulaski, Miller, Camden, Laclede, Dallas, Wright, Webster, Douglas, Ozark, Taney, Stone, Greene, Polk, Hickory, Cedar, Barry, Jasper, Newton, and McDonald counties.

***Parthenium Hysterophorus* L.** Santa Maria.

Waste ground and along railroads. Introduced in Jackson Co.

***Iva ciliata* Willd.** Marsh Elder.

Prairies, fields, and waste ground. Circumneutral to oxylophile. General but scattered, and apparently absent from much of the Ozark region: Clark, Linn, Randolph, Monroe, Pike, Lincoln, St. Charles, St. Louis, Jefferson, Perry, Mississippi, New Madrid, Pemiscot, Gasconade, Miller, Morgan, Saline, Livingston, Clay, Jackson, Lafayette, Henry, Greene, Bates, Vernon, Barton, Jasper, and Newton counties.

***Iva xanthifolia* Willd.**

Fields, alluvial and waste ground. Indifferent. Northwestern and west-central Mo.: Atchison, Buchanan, and Jackson counties. Introduced from the Northwest.

***Ambrosia bidentata* Michx.**

Rocky prairies, fields, and waste ground. Circumneutral to oxylophile. General.

**Ambrosia bidentata** × **trifida**.

Rarely occurring with the parent species. Local: Morgan Co.

**Ambrosia trifida** L. Horse-weed.

*Ambrosia striata* Rydb. (R).

Alluvial fields, borders of woods, and waste ground. Circumneutral. General and common.

**Ambrosia trifida** var. **integrifolia** (Muhl.) T. & G.

Sometimes found with the typical form.

**Ambrosia artemisiaefolia** L. var. **elatior** (L.) Desc. See Rh. 37: 185. 1935.  
Ragweed, Roman Wormwood.

*Ambrosia artemisiifolia* of auth., not L. (G), (B & B).

Fields and waste ground. Indifferent. General and common.

**Ambrosia artemisiaefolia** var. **elatior** f. **villosa** Fernald & Griseom, Rh. 37: 185. 1935.

Commonly occurring with the preceding variety. General.

**Ambrosia psilostachya** DC.

Rocky prairies, pastures, and glades. Circumneutral to oxylophile. Northern, central, and western Mo., absent from most of the Ozark region: Clark, Marion, Pike, Montgomery, St. Louis, St. Francois, Randolph, Boone, Carroll, Saline, Atchison, Holt, Andrew, Buchanan, Dekalb, Clinton, Jackson, Barton, and Jasper counties.

**Ambrosia aptera** DC.

Introduced in waste ground. St. Louis Co.

**Xanthium acerosum** Greene. Cocklebur.

Introduced in waste ground. Jackson Co.

**Xanthium italicum** Mor.

*Xanthium glanduliferum* Greene (R).

*Xanthium commune* Britton (G), (B & B).

Fields, roadsides, and waste ground. Indifferent. General.

**Xanthium speciosum** Kearney.

Cultivated fields and waste ground. Indifferent. Western Mo., scattered: Jackson, Cass, and Jasper counties.

**Xanthium inflexum** Mack. & Bush.

Low cultivated ground. Indifferent. Western Mo.: Jackson Co.

**Xanthium echinatum** Murr.

Cultivated and waste ground. Scattered: St. Louis, Jefferson, Jackson, and Jasper counties.

**Xanthium globosum** Shull, Bot. Gaz. 59: 482, figs. 1, 4, 5, 7. 1915.

Low alluvial fields, roadsides, and waste ground. Indifferent. Scattered: Randolph, Cass, and Jasper counties.

**XANTHIUM SPINOSUM** L.

Fields and waste ground. Indifferent. Eastern Mo.: St. Louis Co.

**Xanthium pennsylvanicum** Wallr.

Cultivated fields, roadsides, and waste ground. Indifferent. General.

**Xanthium chinense** Mill.

*Xanthium canadense* of auth., not Mill. (G).

Fields, roadsides, waste and alluvial ground, often in moist soil along ponds, sloughs, streams, and swampy open woods. Indifferent. General: Schuyler, Sullivan, Boone, Montgomery, Warren, St. Charles, St. Louis, Mississippi, New Madrid, Jefferson, Dent, Maries, Pettis, Linn, Jackson, Greene, Jasper, and McDonald counties.

***Xanthium chinense* × *pennsylvanicum*.**

Occasionally found with the parent species. Knox and St. Louis counties.

***Xanthium italicum* × *pennsylvanicum*.**

Occasionally found with the parent species. Montgomery and St. Louis counties.

***Heliopsis scabra* Dunal. Rough Ox-eye.**

Rocky woods and thickets. Circumneutral. General.

***Heliopsis helianthoides* (L.) Sweet. Ox-eye.**

Rocky woods and thickets. Circumneutral. Eastern and middle Mo.

***Eclipta alba* (L.) Haask.**

Moist fields, open ground, and borders of sloughs and ponds. Circumneutral. General, but commonest along the larger rivers.

***Rudbeckia triloba* L. Brown-eyed Susan.**

Rocky woods, thickets, and open banks. Circumneutral. General.

***Rudbeckia subtomentosa* Pursh.**

Moist open woods, thickets, and borders of prairie streams. Circumneutral. General.

***Rudbeckia subtomentosa* var. *Craigii* Sherff, Rh. 14: 164. 1912.**

Occasionally found with the typical form. St. Louis Co.

***Rudbeckia speciosa* Wenderoth.**

Rocky open woods, glades, and thickets. Circumneutral. Southern Mo.: Iron, Shannon, Jasper, and Newton counties.

***Rudbeckia palustris* Eggert.**

Wet ground about springs, wet ledges and banks. Calciphile to circumneutral. Southern Mo.: Iron, Wayne, Ripley, Dent, Shannon, Texas, Douglas, Ozark, and Taney counties.

***Rudbeckia hirta* L. Black-eyed Susan, Nigger Head.**

*Rudbeckia sericea* Moore (S).

*Rudbeckia longipes* Moore (S).

Open woods, thickets, rocky prairies, and waste ground. Circumneutral. General and common.

***Rudbeckia missouriensis* Engelm.**

*Rudbeckia fulgida* of auth. in part, not Ait. (G), (B & B).

Rocky prairies, glades, and bald knobs. Calciphile. Southern and central Mo. south and east of a line drawn from St. Charles, Montgomery, Boone, Morgan, Hickory, and Polk counties to Benton Co. This species has been confused with *Rudbeckia fulgida* which is not known to occur in Mo.

***Rudbeckia grandiflora* Gmel.**

Dry open ground. Eastern Ozark region: Washington and Shannon counties, and also introduced in Boone and Jackson counties.

***Budbeckia laciniata* L.**

Low open woods, alluvial thickets, and banks of small streams. Circumneutral. General.

***Budbeckia maxima* Nutt.**

Open and waste ground. Introduced from the southwest. Jackson Co.

***Budbeckia amplexicaulis* Vahl.**

Roadsides and waste ground. Circumneutral to calciphile. Introduced in western Mo.: Jackson, Jasper, and Newton counties.

***Echinacea purpurea* (L.) Moench. Purple Cone-flower.**

*Brauneria purpurea* (L.) Britton (G).

Rocky open woods, thickets, and glades. Calciphile to circumneutral. General but commonest in southern and central Mo.

***Echinacea angustifolia* DC.**

Upland prairies. Circumneutral. Northeastern Mo., local: Shelby Co.

***Echinacea pallida* Nutt.**

*Brauneria pallida* (Nutt.) Britton (G).

Rocky prairies and glades. Calciphile to circumneutral. General.

***Echinacea paradoxa* (Norton) Britton.**

*Brauneria paradoxa* Norton (G).

Rocky prairies, glades and bald knobs. Southern Mo., central and western Ozark region: Phelps, Pulaski, Miller, Camden, Laclede, Benton, Dallas, Cedar, Greene, Ozark, Taney, Stone, and Barry counties.

***Ratibida pinnata* (Vent.) Barnhart.**

*Lepachys pinnata* (Vent.) T. & G. (G).

Rocky prairies, thickets, and borders of woods. Circumneutral. General.

***Ratibida columnaris* (Sims) D. Don.**

*Lepachys columnaris* (Sims) T. & G. (G).

Prairies, waste ground, and along roadsides and railroads. Circumneutral. Scattered: Marion, Lincoln, St. Louis, Clay, Jackson, Greene, and Jasper counties. Generally and perhaps everywhere introduced from farther west.

***Ratibida columnaris* f. *pulcherrima* (DC.) W. M. Sharp, Ann. Mo. Bot. Gard. 22: 70. 1935.**

*Lepachys columnaris* var. *pulcherrima* (DC.) T. & G. (G).

Waste ground. Introduced in Jackson Co.

***Spilanthes americana* (Mutis) Hieronymus var. *repens* (Walt.) A. H. Moore.**

Low wet woods, and borders of swamps and bayous. Circumneutral. Southeastern Mo.: Bollinger, New Madrid, Pemiscot, Dunklin, Butler, and Ripley counties.

***Helianthus annuus* L. Sunflower.**

Waste and cultivated ground. Indifferent. General but scattered.

***Helianthus petiolaris* Nutt. Prairie Sunflower, Kansas Sunflower.**

Fields, roadsides, and waste ground. Circumneutral to oxylophile. Scattered: Marion, St. Louis, Scott, Oregon, Jackson, and Jasper counties.

***Helianthus divaricatus* L.**

Rocky woods and thickets. Circumneutral. Eastern Mo.: Marion, Ralls, Pike, St. Louis, Bollinger, New Madrid, Reynolds, and Oregon counties.

***Helianthus lenticularis* Dougl.**

Waste ground. Introduced in Jackson Co.

***Helianthus salicifolius* A. Dietr.** See Papers Mich. Acad. Sci. 9: 333. 1929.

*Helianthus orgyalis* DC. (G), (B & B).

Upland prairies and limestone glades. Calciphile. Western Mo.: Jackson, Henry, Bates, Vernon, and Jasper counties.

***Helianthus atrorubens* L. var. *pubescens* Ktze.** See Rh. 34: 1-2. 1932.

Dry open ground. Circumneutral. Southern Mo.: Scott, Stoddard, Dunklin, Butler, Wayne, Carter, Ripley, Oregon, Howell, and Ozark counties.

***Helianthus rigidus* (Cass.) Desf.** See Papers Mich. Acad. Sci. 9: 344. 1929.

*Helianthus scaberrimus* Ell. (G), (B & B).

Rocky open woods, thickets, and prairies. Circumneutral. General except in Southeastern lowlands and parts of the Ozark region.

***Helianthus laetiflorus* Pers.**

Prairies, thickets, and open banks. Circumneutral. Scattered: Ralls, St. Louis, Jefferson, and Jackson counties.

***Helianthus occidentalis* Riddell.**

Rocky open woods, prairies, and glades. Circumneutral to calciphile. Central and southern Mo.: St. Louis, Franklin, Washington, St. Francois, Crawford, Maries, Phelps, Pulaski, Dent, Shannon, Oregon, Howell, Texas, Wright, Douglas, Camden, Dallas, Barry, Vernon, Jasper, and McDonald counties.

***Helianthus mollis* Lam.**

Prairies, fields, thickets, and roadsides. Circumneutral. General.

***Helianthus grosseserratus* Martens.**

Fields, prairies, and borders of small streams. Circumneutral. Northern, central, and western Mo. Known south of the Missouri River in St. Louis, Jefferson, Iron, Moniteau, Hickory, Cooper, Saline, Pettis, Lafayette, Johnson, Henry, Greene, Jackson, Cass, Bates, Barton, and Jasper counties, and in all of the northern counties.

***Helianthus Maximiliani* Schrad.**

Rocky prairies, glades, loess hills, and bald knobs. Circumneutral to calciphile. Western and southern Mo., scattered: Atchison, Jackson, Ozark, Taney, Stone, and Barry counties.

***Helianthus microcephalus* T. & G.** Small Woods Sunflower.

Moist open woods and thickets. Circumneutral to oxylophile. Southeastern Mo.: Iron, Scott, and Dunklin counties.

***Helianthus doronicoides* Lam.**

Open woods, thickets, and prairies. Circumneutral. Scattered: Schuyler, Boone, St. Louis, Shannon, and Jasper counties.

***Helianthus formosus* E. E. Wats.** Papers Mich. Acad. Sci. 9: 445, pl. 72. 1929.

Open woods and along bluffs. Circumneutral to calciphile. Eastern and southern Mo.: Marion, St. Louis, Jefferson, Shannon, and Greene counties.

***Helianthus angustifolius* L.**

Sandy open woods and prairies. Oxylophile. Southeastern Mo.: Scott, Mississippi, and Butler counties.

**Helianthus hirsutus** Raf.

*Helianthus leptocaulis* (Wats.) Blake.

Rocky open woods, thickets, and prairies. Circumneutral. General.

**Helianthus hirsutus** var. *trachyphyllus* T. & G.

Prairies and thickets. Occasionally found with the typical form. Jasper Co.

**Helianthus hirsutus** var. *leoninus* (E. E. Wats.) Palmer & Steyermark, comb. nov.

*Helianthus leoninus* E. E. Wats.

*Helianthus virilis* E. E. Wats.

Open woods and roadsides. Circumneutral. Scattered: Marion, Lafayette, Clay, Jackson, and Buchanan counties.

**Helianthus strumosus** L.

Prairie swales and moist ground along streams. Circumneutral. General but scattered: Marion, Ralls, Pike, St. Louis, Crawford, Dunklin, Boone, Taney, Jackson, and Jasper counties.

**Helianthus trachelifolius** Mill.

Introduced in waste ground. Jackson Co.

**Helianthus decapetalus** L.

Open woods, thickets, and prairies. General but scattered: Marion, Ralls, Boone, Dunklin, and Jasper counties.

**Helianthus tuberosus** L. Jerusalem Artichoke.

Moist woods and thickets, wet prairies, and waste ground. Circumneutral. General.

**Helianthus tuberosus** var. *subcanescens* Gray.

*Helianthus subcanescens* (Gray) E. E. Wats.

*Helianthus mollissimus* E. E. Wats.

Commonly found with the typical form. Scattered: Audrain, St. Louis, Jefferson, Jackson, and Jasper counties.

**Helianthus instabilis** E. E. Wats. Papers Mich. Acad. Sci. 9: 423. pl. 65. 1929.

Moist prairies and roadsides. Circumneutral. Scattered.

**Verbesina encelioides** (Cav.) Benth. & Hook. var. *exauriculata* Robinson & Greenman.

Introduced in waste ground. St. Louis and Jackson counties.

**Verbesina virginica** L. White Crown-beard.

Rocky open woods and thickets. Circumneutral. East-central and southern Mo.: St. Louis, Jefferson, Franklin, Washington, Dent, Iron, Scott, Stoddard, Dunklin, Shannon, Texas, Howell, Phelps, Pulaski, Douglas, Ozark, Taney, Greene, Webster, Stone, Barry, Vernon, Barton, Jasper, Newton, and McDonald counties.

**Verbesina helianthoides** Michx.

Rocky open woods and thickets. Circumneutral. General.

**Actinomeris alternifolia** (L.) DC.

Low open woods and thickets. Circumneutral. General.

**Coreopsis tinctoria** Nutt.

Glades and sandy or rocky open ground. Oxylophile to circumneutral. Scattered: Schuyler, Boone, Cole, Phelps, Butler, Ripley, Oregon, Jackson, Jasper, and Newton counties. Native in southern Mo., and escaped from cultivation northward.



*Coreopsis lanceolata* L. Tickseed *Coreopsis*.

Rocky prairies, glades, and fields. Oxylophile. Central and southern Mo. north to St. Louis, Saline, and Clay counties, and escaped from cultivation in Pike Co.

*Coreopsis lanceolata* var. *villosa* Michx.

*Coreopsis crassifolia* Ait. (B & B), (R).

Rocky prairies and glades. Oxylophile. East-central and southern Mo.: St. Louis, Jefferson, Franklin, Shannon, Texas, Howell, Ozark, Barry, Jasper, and McDonald counties.

*Coreopsis grandiflora* Hogg.

Prairies, meadows, glades, and thickets. Circumneutral to oxylophile. Western and southern Mo.: Wayne, Ripley, Jackson, Henry, St. Clair, Cedar, Bates, Vernon, Greene, Jasper, and Newton counties.

*Coreopsis pubescens* Ell. Star Tickseed.

Rocky open woods, thickets, and along gravelly beds of streams. Oxylophile to circumneutral. Eastern, central, and southern Mo.: Marion, St. Louis, Jefferson, Franklin, Washington, Crawford, Iron, Reynolds, Ripley, Shannon, Oregon, Howell, Texas, Pulaski, Miller, Dallas, Hickory, Polk, Wright, St. Clair, Cedar, Greene, Taney, Douglas, Jasper, Newton, and McDonald counties.

*Coreopsis palmata* Nutt.

Open woods, glades, thickets, and rocky prairies. Circumneutral to oxylophile. General, but commonest in the Ozark region.

*Coreopsis tripteris* L. Tall Tickseed.

Rocky open woods, bluffs, thickets, and prairies. Circumneutral to calciphile. General, but commonest in the Ozark region.

*Coreopsis tripteris* var. *Deamii* Standley, Rh. 32: 33. 1930.

Occasionally found with the typical form. Scattered: St. Louis, Oregon, Warren, Boone, Dekalb, Harrison, Mercer, and Saline counties.

*Bidens discolor* (T. & G.) Britton.

Wet ground along streams, and about ponds. Circumneutral. Eastern Mo.: Lincoln, St. Louis, Jefferson, Cape Girardeau, and Butler counties.

*Bidens frondosa* L. Beggar-ticks.

Moist woods, thickets, and waste ground. Circumneutral. General.

*Bidens vulgata* Greene.

Moist ground along streams and about ponds, fields, thickets, and waste ground. Circumneutral. General but scattered: Marion, Pike, St. Louis, Shannon, Atchison, and Jackson counties.

*Bidens vulgata* var. *puberula* (Wiegand) Greene.

Occasionally found with the typical form. Western Mo.: Atchison and Jackson counties.

*Bidens comosa* (Gray) Wiegand.

Wet ground, borders of streams, sloughs, and ponds. Circumneutral. General but scattered: Putnam, Boone, Pike, St. Louis, Saline, Atchison, Clay, Jackson, and Greene counties.

*Bidens comosa* var. *acuta* Wiegand.

Occasionally found with the typical form. St. Louis, Perry, Carroll, Gentry, and Jackson counties.

***Bidens connata* Muhl.** Swamp Beggar-ticks.

Wet borders of streams, ponds, and sloughs. Circumneutral. General but scattered: Marion, Pike, Boone, St. Louis, Saline, Atchison, Jackson, and Green counties.

***Bidens cernua* L.** See Rh. 24: 206. 1922. Sticktight.

Muddy borders of slow streams, sloughs, and ponds. Circumneutral. General.

***Bidens cernua* var. *elliptica* Wiegand.**

Occasionally found with the typical form. Western Mo.: Jackson and Jasper counties.

***Bidens cernua* var. *integra* Wiegand.**

Frequently found throughout the range of the typical form.

***Bidens laevis* (L.) BSP.**

Wet ground about sloughs and ponds. Circumneutral. Eastern Mo., south of the Missouri River: St. Louis, Jefferson, and Dunklin counties.

***Bidens bipinnata* L.** Spanish Needles.

Open woods, thickets, fields, and waste ground. Circumneutral. General.

***Bidens aristosa* (Michx.) Britton.**

Prairies, cultivated fields, and waste ground. Circumneutral. General, but most common in prairie regions and in alluvial valleys.

***Bidens aristosa* var. *Fritcheyi* Fernald, Rh. 15: 78. 1913.**

Occasionally found with the typical form. Scattered: Marion, St. Louis, and Jasper counties.

***Bidens aristosa* var. *mutica* (Gray) Gattinger. See Rh. 15: 78. 1913.**

Sometimes found with the typical form. Scattered: Lewis, Marion, Ralls, Pike, St. Louis, Phelps, Jackson, and Greene counties.

***Bidens involucrata* (Nutt.) Britton.**

Wet prairies, cultivated or fallow fields, and waste ground. Circumneutral. General.

***Bidens Beckii* Torr.** Water Marigold.

Wet ground about ponds and sloughs. Circumneutral. Eastern Mo., local: St. Louis Co.

***Thelesperma trifidum* (Poir.) Britton.**

Rocky prairies and glades. Calciphile. Southwestern Mo., local: Greene Co.

***Thelesperma gracile* (Torr.) Gray.**

Waste ground and along railroads. Introduced in Jackson Co.

***Marshallia caespitosa* Nutt.**

Rocky or upland prairies and glades. Calciphile to circumneutral. Southwestern Mo.: Jasper and Newton counties.

***Marshallia obovata* (Walt.) Beadle & Boynton var. *platyphylla* (Curtis) Beadle & Boynton.** False Scabish.

Glades and bald knobs. Calciphile. Southern Mo., local: Ozark Co.

***GALINSOGA PARVIFLORA* Cav.**

Waste and cultivated ground. Indifferent. Scattered.

***GALINSOGA CILIATA* (Raf.) Blake, Rh. 24: 35. 1922.**

*Galinsoga parviflora* var. *hispida* DC. (G).

Waste and cultivated ground. Indifferent. General.

**Flaveria campestris** Johnston.

Fields and waste ground. Introduced from farther west. Marion and Jackson counties.

**Hymenopappus scabiosaeus** L'Her.

*Hymenopappus carolinensis* (Lam.) Porter (G), (B & B), (R).

Rocky prairies, glades, bald knobs, and sandy open woods. Circumneutral to oxylophile. Southern Mo.: Scott, Mississippi, Taney, Stone, and Barry counties. This has been confused with *Hymenopappus corymbosus* which is not known in Mo.

**Palafoxia callosa** (Nutt.) T. & G.

*Polypteris callosa* (Nutt.) Gray (G).

*Othake callosum* (Nutt.) Bush (B & B).

Glades, bald knobs, rocky open ground, and along gravelly beds of streams. Calciphile. Southwestern Mo.: Douglas, Ozark, Greene, Taney, Stone, Barry, and McDonald counties.

**Helenium nudiflorum** Nutt. Sneezeweed.

*Helenium campestre* Small (S).

*Helenium polyphyllum* Small (R).

Moist ground, meadows and fields, and borders of ponds, sloughs, and streams. Circumneutral. General, but commonest in central and southern Mo.

**Helenium autumnale** L.

*Helenium latifolium* Mill. (R), (S).

*Helenium altissimum* Link (R).

Moist ground, prairie swales, and borders of ponds and streams. Circumneutral. General and common.

**Helenium tenuifolium** Nutt. Bitterweed, Yellow Dog Fennel.

Fields and waste ground. Oxylophile. General, but commonest in the Ozark region. Generally and perhaps everywhere introduced from farther south, and sometimes becoming a troublesome weed.

**Gaillardia lutea** Greene.

Moist sandy open ground. Oxylophile to circumneutral. Southeastern Mo., local: Dunklin Co.

**Gaillardia pulchella** Foug. Indian Blanket.

Fields and waste ground. Circumneutral. Introduced or escaped from cultivation. Pike, Platte, and Jackson counties.

**Tagetes erecta** L.

Roadsides and waste ground. Escaped from cultivation. Scattered: Marion, St. Louis, and St. Francois counties.

**Dysodia papposa** (Vent.) Hitchc. Fetid Marigold.

Dry prairies, fields, and waste ground. Circumneutral to oxylophile. General.

**Achillea Millefolium** L. Yarrow.

Prairies, thickets, and waste ground. Indifferent. General and common.

**Achillea Millefolium** f. *rosea* Rand & Redfield.

Commonly occurring with the typical form. General.

**Achillea lanulosa** Nutt.

Fields and waste ground. Circumneutral. Scattered: Sullivan, Marion, Monroe, St. Louis, Linn, Moniteau, Wright, and Vernon counties.

**ANTHEMIS COTULA L.** Dog Fennel.

Fields and waste ground; frequently about dwellings. Indifferent. General.

**ANTHEMIS ARVENSIS L. var. AGRESTIS (Wallr.) DC.** Corn Chamomile.

Fields and waste ground. Indifferent. Scattered: Jackson and Jasper counties.

**ANTHEMIS TINCTORIA L.** Yellow Chamomile.

Escaped from cultivation. Local: Greene Co.

**MATRICARIA CHAMOMILLA L.** Wild Chamomile.

Introduced in waste ground. Indifferent. Scattered: St. Louis and Phelps counties.

**MATRICARIA MATRICARIOIDES (Less.) Porter.** Pineapple Weed.

*Matricaria suaveolens* (Pursh) Buchenau (G), (B & B).

Rocky waste ground, fields, and roadsides. Oxylophile to circumneutral. Central and southern Mo., scattered: St. Louis, Jefferson, Franklin, Jasper, and Newton counties.

**CHRYSANTHEMUM LEUCANTHEMUM L.** Ox-eye Daisy.

Fields, pastures, roadsides, and waste ground. Scattered: St. Louis, Boone, Platte, and Jackson counties.

**CHRYSANTHEMUM LEUCANTHEMUM var. PINNATIFIDUM** Lecoq & Lamotte.

Fields, rocky pastures, and waste ground. Indifferent. General and more common than the typical form.

**TANACETUM VULGARE L.** Tansy.

Fields and waste ground. Indifferent. General but scattered.

**TANACETUM VULGARE var. CRISPUM** DC.

Rarely found with the typical form. Boone Co.

**Artemisia dracunculus L. var. glauca** Jepson.

*Artemisia dracunculoides* Pursh (G), (B & B).

Prairies, rocky or alluvial banks, and loess hills. Calciphile to circumneutral. Northern Mo., scattered: Clark, Holt, Buchanan, and Jackson counties.

**Artemisia campestris L. var. caudata (Michx.) Palmer & Steyermark, comb. nov.** Wild Wormwood.

*Artemisia caudata* Michx. (G), (B & B).

*Artemisia campestris* subsp. *caudata* (Michx.) Hall & Clements.

Glades, bluffs, and gravel bars of streams. Oxylophile. Eastern Mo., south of the Missouri River: St. Louis, Jefferson, Dent, and Shannon counties.

**Artemisia frigida** Willd. Wormwood Sage.

Waste ground. Introduced from farther west. Jackson Co.

**ARTEMISIA ANNUA L.** Wormwood.

Fields, and rocky or waste ground. Indifferent. Eastern, central, and southern Mo., commonest in the Ozark region.

**Artemisia biennis** Willd.

Waste ground and gravel bars of streams. Circumneutral. Scattered: St. Louis, Iron, Clay, and Jackson counties.

**Artemisia vulgaris L. var. ludoviciana (Nutt.) Ktze.** Mugwort.

*Artemisia ludoviciana* Nutt. (G) in part, (B & B).

Rocky prairies, pastures, and glades. Calciphile to circumneutral. General but scattered.

*Artemisia vulgaris* var. *Wrightii* (Gray) Palmer & Steyermark, comb. nov.

*Artemisia Wrightii* Gray.

*Artemisia vulgaris* subsp. *Wrightii* Hall & Clements.

*Artemisia kansana* Britton (G), (B & B).

*Artemisia Carruthi* Wood.

Waste ground. Introduced from the Southwest. Jackson Co.

*Artemisia vulgaris* var. *gnaphalodes* (Nutt.) Ktze.

*Artemisia gnaphalodes* Nutt. (B & B).

*Artemisia ludoviciana* of auth. in part, not Nutt. (G) in part.

Upland prairies and glades. Circumneutral to calciphile. Northern, central, and western Mo.: Clark, Knox, Adair, Marion, Ralls, St. Charles, St. Louis, Mercer, Worth, Grundy, Carroll, Saline, Harrison, Caldwell, Gentry, Dekalb, Atchison, Holt, Clinton, Clay, Jackson, and Dade counties.

*Artemisia vulgaris* var. *mexicana* (Willd.) Torr. & Gray.

*Artemisia mexicana* Willd. (B & B).

*Artemisia Lindheimeriana* Scheele.

Rocky prairies and glades. Calciphile to circumneutral. Western and middle Mo.: Phelps, Macon, Chariton, Boone, Saline, Henry, Jackson, Barton, Jasper, and Newton counties.

*Erechtites hieracifolia* (L.) Raf. var. *intermedia* Fernald, Rh. 19: 27. 1917.

Fireweed.

*Erechtites hieracifolia* of auth. in part (G), (B & B).

Rocky open woods, thickets, and waste ground; also often in burned-over woods. Indifferent. General. The typical form is of more northern range and is not known in Missouri.

*Cacalia atriplicifolia* L.

Open woods and thickets. Circumneutral. General.

*Cacalia suaveolens* L.

Rich or wet open woods. Circumneutral. East-central Mo.: Warren, St. Louis, and Jefferson counties.

*Cacalia reniformis* Muhl.

Rich or moist rocky woods. Circumneutral. Eastern, middle, and southern Mo.: Putnam, Sullivan, Schuyler, Adair, Clark, Ralls, Boone, Montgomery, Warren, St. Louis, Jefferson, Franklin, Ste. Genevieve, Cape Girardeau, Bollinger, Shannon, Texas, Howell, Douglas, Barry, and McDonald counties.

*Cacalia tuberosa* Nutt. Indian Plantain.

Prairies and limestone glades. Calciphile to circumneutral. General but commonest in the glades of the Ozark region.

*Senecio glabellus* Poir. Butter-weed.

Low alluvial ground along streams, and borders of sloughs and swamps. Circumneutral. Northern, eastern, and central Mo., mostly along the larger rivers: Shelby, Ralls, Lincoln, St. Louis, Jefferson, Ste. Genevieve, Bollinger, Mississippi, Pemiscot, Dunklin, Stoddard, Butler, Ripley, Oregon, Linn, Livingston, Boone, Howard, Saline, Clay, and Jackson counties.

*Senecio obovatus* Muhl. Squaw-weed.

Rich woods and moist ledges along bluffs. Circumneutral to calciphile. Central and southern Mo., scattered: Jefferson, Boone, Phelps, Shannon, Greene, Taney, Vernon, Jasper, and McDonald counties.

**Senecio obovatus** var. **rotundus** Britton.

In similar situations to the preceding, but more common. Circumneutral. Central and southern Mo. south and east of a line drawn from St. Louis, Montgomery, Boone, and Morgan counties to Jasper Co.

**Senecio obovatus** var. **umbratilis** Greenman.

Occasionally found with the typical form. Circumneutral. Scattered. Shannon and Moniteau counties.

**Senecio aureus** L. Golden Ragwort, Squaw-weed.

Rich or rocky woods, and along spring brooks and streams. Circumneutral. General.

**Senecio aureus** var. **semicordatus** (Mack. & Bush) Greenman, Ann. Mo. Bot. Gard. 3: 129. 1916.

*Senecio aureus* × *Balsamitae* Greenman.

Prairie swales. Circumneutral. Western Mo., local: Jackson Co.

**Senecio aureus** var. **gracilis** (Pursh) Britton.

Moist woods and prairie swales. Circumneutral. Scattered: Randolph and Douglas counties.

**Senecio plattensis** Nutt. Prairie Ragwort.

*Senecio pseudotomentosus* Mack. & Bush (B & B).

Upland prairies, glades, rocky woods, and ledges. Circumneutral to calciphile. General.

**Senecio pauperculus** Michx. See Ann. Mo. Bot. Gard. 3: 159. 1916.

*Senecio Balsamitae* Muhl. (G), (B & B).

*Senecio pauperculus* var. *Balsamitae* (Muhl.) Fernald.

Prairies and meadows. Circumneutral. Northeastern and central Mo.: Adair, Macon, Knox, Shelby, Marion, Ralls, Pike, Audrain, Randolph, Boone, Callaway, Moniteau, Pettis, and Henry counties.

**ARCTIUM MINUS** Bernh. Burdock.

Waste ground, frequently about dwellings. Indifferent. General and common.

**ARCTIUM TOMENTOSUM** Mill. See Rh. 12: 44-45. 1910.

Waste ground. Introduced in Jackson Co.

**CARDUUS CRISPUS** L. Curly Thistle.

Waste ground and roadsides. Introduced in St. Louis Co.

**CIRSIIUM LANCEOLATUM** (L.) Hill. Bull Thistle.

Fields, pastures, and waste ground. Indifferent. General.

**Cirsium undulatum** (Nutt.) Spreng. var. **megacephalum** (Gray) Fernald.

Loess hills and prairies. Scattered: Wayne, Atchison, and Jackson counties.

**Cirsium discolor** (Muhl.) Spreng.

Prairies, thickets, and open woods. Circumneutral. General but scattered: Mercer, Marion, Boone, St. Louis, Dunklin, Vernon, Barton, and Jasper counties.

**Cirsium odoratum** (Muhl.) Petrak, Beih. z. Bot. Centralbl. II. 35: 378-381. 1917.

*Cirsium pumilum* Spreng. (G).

*Cirsium Hallii* (Canby) Fernald (G), (B & B).

Waste ground. Introduced in St. Louis Co.



*Cirsium ochrocentrum* Gray var. *Helleri* (Small) Petrak, Beih. z. Bot. Centralbl. II. 35: 418-419. 1917.

Waste ground. Introduced in Jackson Co.

*Cirsium altissimum* (L.) Spreng. See Beih. z. Bot. Centralbl. II. 35: 396-400. 1917.

*Cirsium iowense* (Pammel) Fernald (R).

Thickets, dry open or low alluvial woods, and rocky slopes. Circumneutral to oxylophile. General. The characters used to distinguish *Cirsium iowense* do not seem constant and it intergrades freely with true *C. altissimum*.

*Cirsium virginianum* (L.) Michx.

Rocky open woods and thickets. Oxylophile to circumneutral. Southern Mo., eastern Ozark region: St. Francois, Iron, Madison, Wayne, Carter, Ripley, Dent, and Phelps counties.

*Cirsium muticum* Michx. Swamp Thistle.

Swampy ground. Circumneutral. Eastern Mo., south of the Missouri River: St. Louis and Shannon counties.

*Cirsium arvense* (L.) Scop. Canada Thistle.

Fields and waste ground. Indifferent. Scattered: Adair, St. Louis, Jefferson, St. Francois, and Jackson counties.

*Onopordum acanthium* L. Cotton Thistle, Scotch Thistle.

Waste ground. Indifferent. Southeastern Mo.: Iron, St. Francois, and Cape Girardeau counties.

*Centaurea cyanus* L. Ragged Robbin, Bachelor's Button.

Waste ground and roadsides. Escaped from cultivation. Indifferent. Scattered: Boone, Jackson, and Jasper counties.

*Centaurea solstitialis* L. Barnaby's Thistle.

Fields and waste ground. Introduced in Boone Co.

*Centaurea melitensis* L.

Waste ground. Introduced in Jackson Co.

*Centaurea vochinensis* Bernh.

Fields and waste ground. Introduced in Boone and St. Louis counties.

*Centaurea maculosa* Lam.

Old fields and waste ground. Scattered. Introduced in Boone and Howell counties.

*Centaurea picris* Pall.

Waste ground. Introduced in Jackson Co.

*Centaurea americana* Nutt.

Rocky open woods, glades, and bald knobs. Southwestern Mo.: Barry and McDonald counties, and also introduced in St. Louis and Jackson counties.

*Serinia oppositifolia* (Raf.) Ktze.

Prairies, meadows, thickets, and glades or sandy open ground. Oxylophile. Southern and west-central Mo. and locally northwestward in Livingston Co.: St. Francois, Bollinger, Cape Girardeau, Wayne, Scott, Dent, Oregon, Maries, Cass, Henry, Livingston, Bates, Lawrence, Jasper, Newton, and McDonald counties.

**CICHORIUM INTYBUS L.** Chicory.

Fields, pastures, and waste ground. Indifferent. General but commonest in eastern Mo.

**Krigia virginica (L.) Willd.** Dwarf Dandelion.

Rocky open ground, glades, and fallow fields. Oxylophile. Eastern and southern Mo.: Montgomery, Lincoln, Jefferson, St. Francois, Ste. Genevieve, Madison, Wayne, Iron, Gasconade, Texas, Polk, Henry, Greene, Ozark, Lawrence, Jasper, Newton, and McDonald counties.

**Krigia biflora (Walt.) Blake, Rh. 17: 135. 1915.**

*Krigia amplexicaulis* Nutt. (G).

*Cynthia virginica* (L.) D. Don (B & B), in part.

Rocky open woods, low ground along streams, thickets, and prairies. Circumneutral to oxylophile. General and common.

**Krigia Dandelion (L.) Nutt.**

Prairies, glades, borders of woods, sandy fields, and alluvial or low sandy woods. Oxylophile. Central and southern Mo.: Montgomery, St. Louis, Jefferson, Franklin, Washington, St. Francois, Ste. Genevieve, Madison, Bollinger, Crawford, Iron, Wayne, Ripley, Dunklin, Oregon, Reynolds, Dent, Carter, Gasconade, Shannon, Phelps, Maries, Pulaaski, Texas, Laclede, Douglas, Howell, Henry, Polk, Cedar, Webster, Vernon, Greene, Jasper, Newton, and McDonald counties.

**Krigia occidentalis Nutt.**

*Cymbia occidentalis* (Nutt.) Standley (B & B).

Rocky open woods and glades. Oxylophile. Southwestern Mo.: Jasper and McDonald counties. This species has often been confused with *Krigia virginica* and *Serinia oppositifolia*.

**PICRIS SPRENGERIANA Poir.** See Bull. Mo. Bot. Gard. 19: 121. 1931.

Waste ground. Introduced in St. Louis Co.

**TRAGOPOGON PRATENSIS L.** Goat's Beard.

Fields, meadows, and along roadsides and railroads. Indifferent. General: Lincoln, St. Charles, St. Louis, Jefferson, St. Francois, Madison, Maries, Schuyler, Adair, Mercer, Daviess, Laclede, Atehison, Nodaway, and Platte counties, and spreading state-wide.

**TRAGOPOGON PORRIFOLIUS L.** Vegetable Oyster, Salsify.

Fields and waste ground. Escaped from cultivation. Indifferent. Scattered: Boone, St. Louis, Pulaski, Camden, and Jackson counties.

**TARAXACUM PALUSTRE (Lyons) Lam. & DC. var. VULGARE (Lam.) Fernald, Rh. 35: 380. 1933.** Dandelion.

*Taraxacum officinale* Weber (G).

*Leontodon Taraxacum* L. (B & B).

Fields and waste ground; common about dwellings. Indifferent. General.

**TARAXACUM LAEVIGATUM (Willd.) DC.** See Rh. 35: 379. 1933. Red-seeded Dandelion.

*Taraxacum erythrospermum* Andr. (G).

*Leontodon erythrospermum* (Andrz.) Britton (B & B).

Fields and waste ground about dwellings. Indifferent. General.

- Crepis setosa* Hall. Hawk's Beard.  
Fields and waste ground. Introduced in Boone Co.
- CREPIS CAPILLARIS* (L.) Wallr.  
Open ground. Introduced in St. Louis Co.
- SONCHUS ARVENSIS* L. Sow Thistle.  
Waste ground. Indifferent. Introduced in Jackson Co.
- SONCHUS OLERACEUS* L. Common Sow Thistle.  
Fields and waste ground. Indifferent. General.
- SONCHUS ASPER* (L.) Hill.  
Fields and waste ground. Indifferent. General.
- LACTUCA SALIGNA* L.  
Roadsides and waste ground. Indifferent. Scattered: Marion, Pike, Monroe, St. Louis, Maries, Phelps, Pulaski, Laclede, Saline, Pettis, Dallas, Wright, Webster, Douglas, Greene, and Barry counties.
- LACTUCA SCARIOLA* L. Prickly Wild Lettuce.  
Roadsides and waste ground. Indifferent. General.
- LACTUCA SCARIOLA* var. *INTEGRATA* Gren. & Godr.  
Commonly found with the typical form. General.
- Lactuca canadensis* L. var. *typica* Wiegand, Rh. 22: 10. 1920.  
*L. canadensis* L., in part (G), (B & B).  
Fields, thickets, and waste ground. Indifferent. General but scattered.
- Lactuca canadensis* var. *latifolia* Ktze.  
Occasionally found with the typical form. Scattered: St. Charles, St. Louis, Jefferson, Boone, Clinton, and Jasper counties.
- Lactuca canadensis* var. *latifolia* f. *exauriculata* Wiegand, Rh. 22: 11. 1920.  
Sometimes found with the typical and other varieties. Scattered: St. Francois, Howell, and Hickory counties.
- Lactuca canadensis* var. *integrifolia* (Bigel.) T. & G.  
*Lactuca sagittifolia* Ell. (G), (B & B).  
*Lactuca canadensis* var. *montana* Britton (B & B).  
Thickets and waste ground. Indifferent. General but scattered: Boone, St. Louis, Dunklin, Jackson, Henry, and Jasper counties.
- Lactuca canadensis* var. *integrifolia* f. *angustata* Wiegand, Rh. 22: 11. 1920.  
Occasionally found with the other forms. St. Louis Co.
- Lactuca canadensis* var. *obovata* Wiegand, Rh. 22: 11. 1920.  
*Lactuca integrifolia* of auth., not Bigel. (G).  
Thickets, fields and waste ground. Scattered: St. Louis, Ste. Genevieve, Mississippi, Boone, Jackson, and Taney counties.
- Lactuca canadensis* var. *obovata* f. *stenopoda* Wiegand, Rh. 22: 11. 1920.  
Occasionally occurring with the variety. Lincoln Co.
- Lactuca ludoviciana* (Nutt.) Riddell.  
Plains and waste ground. Circumneutral. Northwestern Mo.: Atchison Co.
- Lactuca hirsuta* Muhl.  
Dry open woods and waste ground. Circumneutral. Southwestern Mo., local: Jasper Co.

***Lactuca villosa* Jacq.**

Open woods and thickets. Circumneutral. General.

***Lactuca pulchella* (Pursh) DC.**

Moist open ground and loess hills. Calciphile. Western Mo.: Atchison and Jackson counties.

***Lactuca floridana* (L.) Gaertn.**

Open woods and thickets. Circumneutral. General.

***Lactuca graminifolia* Michx.**

Introduced along railroads. Butler Co.

***Lygodesmia juncea* (Pursh) D. Don.**

Loess hills. Calciphile. Northwestern Mo.: Atchison, Holt, and Buchanan counties.

***Agoseris cuspidata* (Pursh) Steud.**

Prairies and glades. Calciphile. West-central Mo., local: Jackson Co.

***Pyrrhopappus carolinianus* (Walt.) DC. False Dandelion.**

Prairies, fields, and waste ground. Circumneutral. General.

***Prenanthes altissima* L. var. *cinnamomea* Fernald.**

Rocky woods and bluffs. Circumneutral. Eastern and middle Missouri, mostly in the eastern Ozark region: Boone, Warren, St. Louis, Jefferson, Ste. Genevieve, Wayne, Iron, Dunklin, Carter, Shannon, Texas, and Ozark counties.

***Prenanthes alba* L. Rattlesnake-root, White Snake-root.**

Rich or rocky woods. Circumneutral to oxylophile. Eastern Mo.: Clark, Marion, St. Louis, Franklin, and Gasconade counties.

***Prenanthes aspera* Michx.**

Rocky open woods and prairies. Circumneutral. General but scattered.

***Prenanthes crepidinea* Michx.**

Open woods and thickets. Circumneutral. East-central and southern Mo.: Audrain, Boone, St. Louis, Washington, Wayne, Greene, and Taney counties.

***Hieracium scabrum* Michx. Hawkweed.**

Rocky woods and thickets. Oxylophile. Eastern, middle, and southern Mo.: Adair, Boone, Callaway, Lincoln, St. Louis, Jefferson, St. Francois, Ste. Genevieve, Scott, Iron, Reynolds, Shannon, Dent, Wright, Greene, Stone, Jasper, and Newton counties.

***Hieracium Gronovii* L. See Rh. 37: 185. 1935.**

Rocky open woods, thickets, and fields. Oxylophile. General. Several forms of this species have been confused with both *Hieracium venosum* and *Hieracium Traillii* (*Hieracium Greenii*) neither of which occur in Missouri.

***Hieracium Gronovii* var. *foliosum* Michx. See Rh. 37: 185. 1935.**

Similar situations to the preceding. Oxylophile. Scattered in eastern, central, and southern Mo.: St. Louis, Jefferson, Shannon, Phelps, Ozark, Jasper, and Marion counties.

***Hieracium longipilum* Torr.**

Rocky open woods and prairies. Oxylophile. Eastern, central, and southern Mo.: Marion, Boone, Callaway, Iron, Reynolds, Dent, Shannon, Texas, Morgan, Henry, Hickory, Polk, Greene, Howell, Vernon, Barton, Jasper, and Newton counties.

## TABULAR LIST OF FAMILIES

Families	Genera		Species		Varieties		Forms		Hybrids
	Native	Introd.	Native	Introd.	Native	Introd.	Native	Introd.	
SPERMATOPHYTA									
GYMNOSPERMAE									
Pinaceae	3		4	2	1				
ANGIOSPERMAE									
MONOCOTYLEDONEAE									
Typhaceae	1		2						
Sparganiaceae	1		3						
Najadaceae	4		11	1	4				
Alismaceae	5		13		3		1		
Hydrocharitaceae	2		2						
Gramineae	59	13	177	51	40	5	7	1	
Cyperaceae	12		166		22				
Araceae	3		4				1		
Lemnaceae	4		9		1				
Commelinaceae	2		13		1				
Xyridaceae	1		1						
Pontederiaceae	3		5						
Juncaceae	2		18		6		1		
Liliaceae	18	5	39	9	5		3		
Dioscoreaceae	1		2		1				
Amoryllidaceae	3	1	3	1	1		1		
Iridaceae	3	1	9	4	1				
Marantaceae	1		1						
Orchidaceae	14		27		3				
DICOTYLEDONEAE									
Piperaceae	1		1						
Salicaceae	2		14	5	4	3	1		8
Leitneriaceae	1		1						
Juglandaceae	2		10		8		3		
Betulaceae	5		6		2		1		
Fagaceae	3		23		8		3		16
Ulmaceae	3		8		5				
Moraceae	3	2	3	4					
Urticaceae	5		7	1					
Santalaceae	1		1						
Loranthaceae	1		1						
Aristolochiaceae	2		2		3				
Polygonaceae	5	1	31	11	6	1	1		1
Chenopodiaceae	7	2	19	13	8	3	4	2	1
Amaranthaceae	5		9	4	3	1			
Phytolaccaceae	1		1						
Nyctaginaceae	1		5		1				
Illecebraceae	1		2						
Aizoaceae	1	1	1	1					

## TABULAR LIST OF FAMILIES (Continued)

Families	Genera		Species		Varieties		Forms		Hybrids
	Native	Introd.	Native	Introd.	Native	Introd.	Native	Introd.	
Caryophyllaceae	5	5	11	16	4	1			1
Portulacaceae	3		6	2			1		
Ceratophyllaceae	1		1						
Nymphaeaceae	5		7	1					
Ranunculaceae	14		41	4	5		6		
Magnoliaceae	2		2		1				
Annonaceae	1		1						
Menispermaceae	3		3						
Berberidaceae	3		3	2					
Lauraceae	2		2		2				
Papaveraceae	3	2	5	4	1				
Fumariaceae	2		7		1				
Cruciferae	13	12	30	29	5	1			
Capparidaceae	2		3	1					
Crassulaceae	2		4	1					
Saxifragaceae	8		15		4		3		
Hamamelidaceae	2		3				2		
Platanaceae	1		1		1		1		
Rosaceae	15	2	111	14	48		6		3
Leguminosae	36	4	96	23	24		1		2
Oxalidaceae	1		4		5		4		
Geraniaceae	1	1	3	1	1				
Linaceae	1		4	1					
Zygophyllaceae	1	1	1	1					
Rutaceae	2	1	2	1					
Simarubaceae		1		1					
Polygalaceae	1		4		3				
Euphorbiaceae	7	2	26	3	2				
Callitrichaceae	1		1		1				
Anacardiaceae	2		6		2				
Aquifoliaceae	1		2		1				
Celastraceae	2		4						
Staphyleaceae	1		1						
Aceraceae	1		6		8		2		
Sapindaceae	1	1	1	1					
Hippocastanaceae	1		2		4				
Balsaminaceae	1		2	1					
Rhamnaceae	3		5	1	2				
Vitaceae	4		13		7				
Tiliaceae	1		2		2				
Malvaceae	4	4	10	10		1			
Hypericaceae	2		14	1					
Elatinaceae	2		2						
Tamaricaceae		1		1					
Cistaceae	2		3						
Violaceae	2		17	1	3				9



## TABULAR LIST OF FAMILIES (Continued)

Families	Genera		Species		Varieties		Forms		Hybrids
	Native	Introd.	Native	Introd.	Native	Introd.	Native	Introd.	
Passifloraceae	1		2						
Loasaceae	1		1						
Cactaceae	2		2		1				
Thymelaeaceae	1		1						
Elaeagnaceae		1		1					
Lythraceae	5		5	1	1				
Melastomaceae	1		2		1				
Onagraceae	7		27		3				
Haloragidaceae	2		3	1	2				
Araliaceae	2		3						
Umbelliferae	23	9	32	10	5				
Cornaceae	2		8				1		
Ericaceae	3		6		6				
Primulaceae	7	1	10	2	2	1			
Sapotaceae	1		2						
Ebenaceae	1		1		2		1		
Styracaceae	1		1						
Oleaceae	3		7		3				
Loganiaceae	2		2						
Gentianaceae	4	1	9	1	1				
Apocynaceae	3	1	7	1	7				
Asclepiadaceae	5		21		3		1		
Convolvulaceae	4		13	6	5	1			
Polemoniaceae	4		7		7		1		
Hydrophyllaceae	5		10						
Boraginaceae	8	2	13	7	4				
Verbenaceae	2		8		1				4
Labiatae	18	6	49	18	14	1	2		
Solanaceae	2	5	19	10	3				
Scrophulariaceae	21	3	44	8	11		2		1
Lentibulariaceae	1		1		1				
Orobanchaceae	2		2						
Bignoniaceae	3		4						
Pedaliaceae		1		1					
Martyniaceae	1		1						
Acanthaceae	3		6		1				
Phrymaceae	1		1						
Plantaginaceae	1		10	1					
Rubiaceae	7		23		4				
Caprifoliaceae	5		15	1	6		1		
Valerianaceae	1		3		1				
Dipsacaceae		1		1					
Cucurbitaceae	5		5						
Campanulaceae	2		5	1					
Lobeliaceae	1		6		1				
Compositae	65	15	243	35	71	5	7		15

## SUMMARY BY DIVISIONS AND CLASSES

	Genera		Species		Varieties		Forms		Hybrids
	Native	Introd.	Native	Introd.	Native	Introd.	Native	Introd.	
Pteridophyta	26		52		13		5		
Spermatophyta	850	109	1785	336	442	24	69	4	60
Gymnospermae	3		4	2	1				
Angiospermae	847	109	1781	334	441	24	69	4	
Monocotyledoneae	139	20	509	68	89	5	14	1	
Dicotyledoneae	708	89	1272	266	352	19	55	3	60

## SUMMARY BY MINOR GROUPS

Families .....	131
Genera	
Native .....	876
Introduced .....	109
Total .....	985
Species	
Native .....	1837
Introduced .....	336
Total .....	2173
Varieties	
Native .....	455
Introduced .....	24
Total .....	479
Forms	
Native .....	74
Introduced .....	4
Total .....	78
Hybrids .....	60
Total number of plants (species, varieties, forms, and hybrids) 2790	

Of the 479 varieties listed 108 (such as *Utricularia vulgaris* var. *americana*, *Lonicera dioica* var. *glaucescens*) should be more properly counted in with the regular species, since they are the only representatives of particular species in the flora. This would bring the total number of species up to 2,281.

## INDEX

Valid names of plants in ordinary Roman type, synonyms or otherwise invalid names in *italics*, new species varieties, forms, hybrids, and new combinations in bold face, and family names in Roman capitals.

	Page		Page
<i>Abutilon</i> Theophrasti .....	598	<i>tuberculata</i> var. <i>prostrata</i> .....	532
<i>Acacia</i> angustissima .....	573	<i>tuberculata</i> var. <i>subnuda</i> .....	533
angustissima var. <i>hirta</i> .....	573	<i>Acorus</i> Calamus .....	495
Prairie .....	573	<i>Actaea</i> <i>alba</i> .....	543
<i>Acalypha</i> digyneia .....	588	<i>brachypoda</i> .....	543
<i>gracilens</i> of auth. ....	588	<i>Actinomeris</i> alternifolia .....	672
<i>gracilens</i> var. <i>monococca</i> .....	588	Adam-and-Eve .....	510
<i>ostryaefolia</i> .....	589	Adder's-mouth .....	510
<i>virginica</i> .....	588	Adder's-tongue .....	
ACANTHACEAE .....	646	White .....	502
<i>Acer</i> floridanum .....	593	Yellow .....	502
<i>Negundo</i> .....	593	<i>Aegilops</i> cylindrica .....	463
<i>Negundo</i> var. <i>interior</i> .....	593	<i>Aesculus</i> <i>arguta</i> .....	594
<i>Negundo</i> var. <i>texanum</i> .....	593	<i>austrina</i> .....	594
<i>Negundo</i> var. <i>violaceum</i> .....	593	<i>discolor</i> .....	594
<i>nigrum</i> .....	593	<i>discolor</i> var. <i>mollis</i> .....	594
<i>nigrum</i> var. <i>Palmeri</i> .....	593	<i>glabra</i> .....	594
<i>rubrum</i> .....	593	<i>glabra</i> var. <i>arguta</i> .....	594
<i>rubrum</i> var. <i>Drummondii</i> .....	593	<i>glabra</i> var. <i>Buckleyi</i> .....	594
<i>rubrum</i> var. <i>Drummondii</i> f. <i>ro-</i>		<i>glabra</i> var. <i>leucodermis</i> .....	594
<i>tundata</i> .....	593	<i>glabra</i> var. <i>pallida</i> .....	594
<i>rubrum</i> var. <i>tridens</i> .....	593	<i>glabra</i> var. <i>Sargentii</i> .....	594
<i>Rugelii</i> .....	592	<i>Pavia</i> of auth. ....	594
<i>saccharinum</i> .....	593	<i>Afsellia</i> <i>macrophylla</i> .....	642
<i>saccharum</i> .....	592	<i>Agalinis</i> <i>aspera</i> .....	643
<i>saccharum</i> var. <i>glaucum</i> .....	592	<i>fasciculata</i> .....	643
<i>saccharum</i> f. <i>Rugelii</i> .....	592	<i>Gattingeri</i> .....	644
<i>saccharum</i> var. <i>Rugelii</i> .....	592	<i>heterophylla</i> .....	644
<i>saccharum</i> var. <i>Schneekii</i> .....	593	<i>purpurea</i> .....	643
ACERACEAE .....	592	<i>Skinneriana</i> .....	644
<i>Acerates</i> <i>angustifolia</i> .....	622	<i>tenuifolia</i> .....	643
<i>floridana</i> of auth. ....	622	<i>tenuifolia</i> var. <i>macrophylla</i> .....	643
<i>hirtella</i> .....	622	<i>tenuifolia</i> var. <i>parviflora</i> .....	644
<i>viridiflora</i> .....	622	<i>viridis</i> .....	644
<i>viridiflora</i> var. <i>lanceolata</i> .....	622	<i>Agastache</i> <i>nepetoides</i> .....	631
<i>viridiflora</i> var. <i>linearis</i> .....	622	<i>serophulariaefolia</i> .....	631
<i>Achillea</i> <i>lanulosa</i> .....	675	<i>serophulariaefolia</i> var. <i>mollis</i> ..	632
<i>Millefolium</i> .....	675	<i>Agave</i> <i>virginica</i> .....	506
<i>Millefolium</i> f. <i>rosea</i> .....	675	<i>virginica</i> f. <i>tigrina</i> .....	507
<i>Aenida</i> <i>tamariscina</i> .....	533	<i>virginica</i> var. <i>tigrina</i> .....	507
<i>tuberculata</i> .....	532	<i>Agoseris</i> <i>cuspidata</i> .....	682

	Page		Page
<i>Agrimonia gryposepala</i> .....	569	<i>mutabile</i> .....	501
<i>microcarpa</i> .....	568	<i>Nuttallii</i> .....	501
<i>mollis</i> .....	568	<i>sativum</i> .....	501
<i>parviflora</i> .....	569	<i>stellatum</i> .....	501
<i>platycarpa</i> .....	569	<i>tricoecum</i> .....	501
<i>pubescens</i> .....	568	<i>vineale</i> .....	501
<i>rostellata</i> .....	569	<i>Alnus rugosa</i> .....	517
<i>Agropyron caninum</i> var. <i>tenerum</i> ..	463	<i>Aloe, False</i> .....	506
<i>pseudorepens</i> .....	463	<i>Alopecurus aequalis</i> .....	466
<i>repens</i> var. <i>subulatum</i> .....	462	<i>aristulatus</i> .....	466
<i>Smithii</i> .....	463	<i>carolinianus</i> .....	466
<i>tenerum</i> .....	463	<i>geniculatus</i> .....	466
<i>trachycaulum</i> var. <i>typicum</i> .....	463	<i>geniculatus</i> of auth. ....	466
<i>Agrostemma Githago</i> .....	536	<i>geniculatus</i> var. <i>aristulatus</i> ..	466
<i>Agrostis alba</i> .....	466	<i>geniculatus</i> var. <i>ramosus</i> .....	466
<i>alba</i> var. <i>vulgaris</i> .....	466	<i>pratensis</i> .....	466
<i>Elliotiana</i> .....	466	<i>Alopecurus graminea</i> .....	535
<i>hyemalis</i> .....	466	<i>longifolia</i> .....	535
<i>interrupta</i> .....	465	<i>media</i> .....	535
<i>perennans</i> .....	466	<i>pubera</i> .....	535
<i>perennans</i> var. <i>aestivalis</i> .....	466	<i>Althaea rosea</i> .....	598
<i>scabra</i> .....	466	<i>Althea, Shrubby</i> .....	599
<i>Schweinitzii</i> .....	466	<i>Alum Root</i> .....	553
<i>Spica-venti</i> .....	465	<i>Alyssum, Hoary</i> .....	547
<i>stolonifera</i> .....	466	<i>Amaranth</i> .....	
<i>tenuis</i> .....	466	<i>Green</i> .....	532
<i>Ague-weed</i> .....	619	<i>Purple</i> .....	532
<i>Ailanthus altissima</i> .....	587	<i>Spiny</i> .....	532
<i>glandulosa</i> .....	587	<b>AMARANTHACEAE</b> .....	532
<i>Aira pallens</i> .....	465	<i>Amaranthus blitoides</i> .....	532
<b>AIZOACEAE</b> .....	534	<i>graecizans</i> .....	532
<b>Alder</b> .....		<i>graecizans</i> var. <i>pubescens</i> .....	532
<i>Black</i> .....	592	<i>hybridus</i> .....	532
<i>Smooth</i> .....	517	<i>hybridus</i> var. <i>hypochondriacus</i> ..	532
<b>Alfalfa</b> .....	576	<i>Palmeri</i> .....	532
<i>Alisma Plantago-aquatica</i> of Am.		<i>paniculatus</i> .....	532
<i>auth.</i> .....	457	<i>retroflexus</i> .....	532
<i>subcordatum</i> .....	457	<i>spinosus</i> .....	532
<b>ALISMACEAE</b> .....	456	<b>AMARYLLIDACEAE</b> .....	506
<b>Alkali Sacaton</b> .....	469	<i>Ambrosia aptera</i> .....	668
<i>Allionia albida</i> .....	534	<i>artemisiaefolia</i> var. <i>elatior</i> .....	668
<i>bracteata</i> .....	534	<i>artemisiaefolia</i> var. <i>elatior</i> f. <i>vil-</i>	
<i>lanceolata</i> .....	534	<i>losa</i> .....	668
<i>linearis</i> .....	534	<i>artemisiifolia</i> of auth. ....	668
<i>nyctaginea</i> .....	533	<i>bidentata</i> .....	667
<i>Allium canadense</i> .....	501	<i>bidentata</i> x <i>trifida</i> .....	668
<i>cernuum</i> .....	501	<i>pilosostachya</i> .....	668

	Page		Page
<i>striata</i> .....	668	<i>Elliotii</i> var. <i>projectus</i> .....	479
<i>trifida</i> .....	668	<i>furcatus</i> .....	479
<i>trifida</i> var. <i>integrifolia</i> .....	668	<i>provincialis</i> .....	479
<i>Amelanchier canadensis</i> .....	557	<i>provincialis</i> var. <i>chrysocomus</i> ...	479
<i>canadensis</i> var. <i>Botryapium</i> ....	557	<i>saccharoides</i> .....	479
<i>humilis</i> .....	557	<i>scoparius</i> var. <i>divergens</i> .....	479
American Barberry .....	544	<i>scoparius</i> var. <i>frequens</i> .....	479
Brooklime .....	154	<i>scoparius</i> var. <i>genuinus</i> .....	479
Columbo .....	619	<i>scoparius</i> var. <i>villosissimus</i> .....	479
Crab .....	557	<i>ternarius</i> .....	479
Frog-bit .....	458	<i>Torreyanus</i> .....	479
Ipecac .....	556	<i>virginicus</i> var. <i>genuinus</i> .....	479
Spikenard .....	609	<i>virginicus</i> var. <i>tetrastachyus</i> ...	479
<i>Amianthium muscaetoxicum</i> .....	500	<i>Androsace occidentalis</i> .....	615
<i>Ammannia auriculata</i> .....	605	<i>Anemone canadensis</i> .....	542
<i>coccinea</i> .....	605	<i>caroliniana</i> .....	541
<i>Amorpha brachycarpa</i> .....	579	<i>cylindrica</i> .....	542
<i>canescens</i> .....	579	<i>Prairie</i> .....	541
<i>canescens</i> var. <i>glabrata</i> .....	579	<i>virginiana</i> .....	542
<i>erocolanata</i> .....	579	<i>virginiana</i> f. <i>leucosepala</i> .....	542
<i>fruticosa</i> .....	579	<i>White</i> .....	542
<i>fruticosa</i> var. <i>angustifolia</i> ....	579	<i>Anemonella thalictroides</i> .....	541
<i>fruticosa</i> var. <i>oblongifolia</i> ....	579	<i>Anethum graveolens</i> .....	612
<i>fruticosa</i> var. <i>tennesseensis</i> ...	579	<i>Angelica villosa</i> .....	612
<i>tennesseensis</i> .....	579	<i>Wood</i> .....	612
<i>Ampelopsis arborea</i> .....	596	<i>Angelico</i> .....	610
<i>cordata</i> .....	596	<i>Angle-pod</i> .....	622
<i>Amphichyris dracunculoides</i> .....	658	ANNONACEAE .....	544
<i>Amphicarpa bracteata</i> .....	584	<i>Anoda cristata</i> var. <i>brachyantha</i> ..	598
<i>comosa</i> .....	584	<i>Antennaria ampla</i> .....	666
<i>monoica</i> .....	584	<i>ealophylla</i> .....	666
<i>Pitcheri</i> .....	584	<i>fallax</i> .....	666
<i>Amphilophis saccharoides</i> .....	479	<i>longifolia</i> .....	666
<i>Amsinckia lycopsoides</i> .....	628	<i>neglecta</i> .....	666
<i>Amsonia ciliata</i> var. <i>tenuifolia</i> ...	620	<i>plantaginifolia</i> .....	665
<i>illustris</i> .....	620	<i>Anthemis arvensis</i> var. <i>agrestis</i> ...	676
<i>Tabernaemontana</i> .....	619	<i>Cotula</i> .....	676
<i>Tabernaemontana</i> var. <i>Gattingeri</i> ..	620	<i>tinctoria</i> .....	676
<i>Tabernaemontana</i> var. <i>salicifolia</i> ..	620	<i>Anthoxanthum odoratum</i> .....	471
ANACARDIACEAE .....	591	<i>Anychia canadensis</i> .....	534
<i>Anacharis occidentalis</i> .....	457	<i>polygonoides</i> .....	534
<i>Anagallis arvensis</i> .....	616	<i>Apera spica-venti</i> .....	465
<i>arvensis</i> var. <i>caerulea</i> .....	616	<i>Apios americana</i> .....	583
<i>Anaphalis margaritacea</i> .....	666	<i>tuberosa</i> .....	583
<i>Andrachne phyllanthoides</i> .....	589	<i>Aplectrum hyemale</i> .....	510
<i>Andropogon chrysocomus</i> .....	479	<i>Aplopappus ciliatus</i> .....	658
<i>Elliotii</i> .....	479	APOCYNACEAE .....	619

	Page		Page
<i>Apocynum androsaemifolium</i> . . . .	620	<i>dichotoma</i> var. <i>Curtissii</i> . . . . .	469
<i>cannabinum</i> . . . . .	620	<i>fasciculata</i> . . . . .	470
<i>cannabinum</i> var. <i>glaberrimum</i> . .	620	<i>gracilis</i> . . . . .	469
<i>cannabinum</i> var. <i>hypericifolium</i> .	620	<i>intermedia</i> . . . . .	470
<i>cannabinum</i> var. <i>pubescens</i> . . .	620	<i>lanosa</i> . . . . .	470
<i>hypericifolium</i> . . . . .	620	<i>longespica</i> . . . . .	469
<i>hypericifolium</i> var. <i>cordigerum</i> .	621	<i>oligantha</i> . . . . .	469
<i>medium</i> . . . . .	620	<i>purpurascens</i> . . . . .	470
<i>medium</i> var. <i>leuconeuron</i> . . . .	620	<i>ramosissima</i> . . . . .	469
<i>sylvaticum</i> . . . . .	620	<i>Aristolochia</i> <i>Serpentaria</i> . . . .	524
Apple . . . . .	556	<i>Serpentaria</i> var. <i>hastata</i> . . . .	525
Apple-of-Peru . . . . .	638	<i>tomentosa</i> . . . . .	525
AQUIFOLIACEAE . . . . .	591	ARISTOLOCHACEAE . . . . .	524
<i>Aquilegia canadensis</i> . . . . .	542	<i>Armoracia</i> <i>Armoracia</i> . . . . .	550
<i>canadensis</i> var. <i>flaviflora</i> . . . .	542	<i>Arrhenatherum elatius</i> . . . . .	465
<i>coccinea</i> . . . . .	542	Arrow Arum . . . . .	495
<i>Arabisopsis Thaliana</i> . . . . .	549	Arrow-head . . . . .	
<i>Arabis brachycarpa</i> . . . . .	552	Broad-leaved . . . . .	456
<i>canadensis</i> . . . . .	552	Long-beaked . . . . .	456
<i>dentata</i> . . . . .	551	Short-beaked . . . . .	456
<i>Drummondii</i> . . . . .	552	Arrow-wood . . . . .	651
<i>glabra</i> . . . . .	552	<i>Artemisia annua</i> . . . . .	676
<i>hirsuta</i> . . . . .	552	<i>biennis</i> . . . . .	676
<i>laevigata</i> . . . . .	552	<i>campestris</i> subsp. <i>caudata</i> . . . .	676
<i>lyrata</i> . . . . .	551	<i>campestris</i> var. <i>caudata</i> . . . .	676
<i>patens</i> . . . . .	552	<i>Carruthi</i> . . . . .	677
<i>virginica</i> . . . . .	552	<i>caudata</i> . . . . .	676
<i>viridis</i> . . . . .	552	<i>dracunculoides</i> . . . . .	676
ARACEAE . . . . .	495	<i>dracunculus</i> var. <i>glauca</i> . . . .	676
<i>Aralia racemosa</i> . . . . .	609	<i>frigida</i> . . . . .	676
<i>spinosa</i> . . . . .	608	<i>gnaphalodes</i> . . . . .	677
ARALIACEAE . . . . .	608	<i>kansana</i> . . . . .	677
<i>Aretium minus</i> . . . . .	678	<i>Lindheimeriana</i> . . . . .	677
<i>tomentosum</i> . . . . .	678	<i>ludoviciana</i> of auth. . . . .	676
<i>Arenaria patula</i> . . . . .	535	<i>mexicana</i> . . . . .	677
<i>serpyllifolia</i> . . . . .	535	<i>vulgaris</i> var. <i>gnaphalodes</i> . . . .	677
<i>stricta</i> var. <i>texana</i> . . . . .	535	<i>vulgaris</i> var. <i>ludoviciana</i> . . . .	676
<i>Argemone alba</i> . . . . .	546	<i>vulgaris</i> var. <i>mexicana</i> . . . .	677
<i>intermedia</i> . . . . .	546	<i>vulgaris</i> subsp. <i>Wrightii</i> . . . .	677
<i>mexicana</i> . . . . .	546	<i>vulgaris</i> var. <i>Wrightii</i> . . . .	677
<i>Arisaema Dracontium</i> . . . . .	495	<i>Wrightii</i> . . . . .	677
<i>triphyllum</i> . . . . .	495	<i>Arthraxon hispidus</i> var. <i>crypta-</i>	
<i>Aristida adacensionis</i> . . . . .	470	<i>therus</i> . . . . .	479
<i>basiramea</i> . . . . .	469	<i>Arunceus sylvestris</i> . . . . .	556
<i>bromoides</i> . . . . .	470	<i>Arundinaria gigantea</i> . . . . .	458
<i>Curtissii</i> . . . . .	469	<i>macrocarpa</i> . . . . .	458
<i>dichotoma</i> . . . . .	469	<i>tecta</i> . . . . .	458



	Page		Page
<i>Arundo Donax</i> .....	462	<i>azureus</i> × <i>laevis</i> .....	662
<i>Asarum canadense</i> var. <i>acuminatum</i> .....	524	<i>commutatus</i> .....	664
<i>canadense</i> var. <i>reflexum</i> .....	524	<i>concinus</i> .....	663
ASCLEPIADACEAE .....	621	<i>cordifolius</i> .....	662
<i>Asclepias amplexicaulis</i> .....	621	<i>cordifolius</i> var. <i>polyccephalus</i> ....	662
<i>exaltata</i> .....	621	<i>depauperatus</i> var. <i>parviceps</i> ...	663
<i>floridana</i> .....	622	<i>Drummondii</i> .....	662
<i>humistrata</i> .....	621, 622	<i>dumosus</i> .....	664
<i>incarnata</i> .....	621	<i>ericoides</i> .....	663
<i>Jonesii</i> .....	622	<i>ericoides</i> of auth. ....	663
<i>kansasana</i> .....	621	<i>ericoides</i> var. <i>platyphyllus</i> ....	663
<i>latifolia</i> .....	622	<i>ericoides</i> var. <i>prostratus</i> .....	663
<i>Meadii</i> .....	622	<i>ericoides</i> var. <i>villosus</i> .....	663
<i>perennis</i> .....	622	<i>exiguus</i> .....	663
<i>phytolaccoides</i> .....	621	<i>furcatus</i> .....	662
<i>purpurascens</i> .....	621	<i>Golden</i> .....	658
<i>quadrifolia</i> .....	622	<i>Heart-leaved</i> .....	662
<i>speciosa</i> .....	621	<i>hirtellus</i> .....	662
<i>stenophylla</i> .....	622	<i>interior</i> .....	665
<i>Sullivantii</i> .....	621	<i>laevis</i> .....	663
<i>syriaca</i> .....	621	<i>lateriflorus</i> .....	664
<i>syriaca</i> of auth. in part .....	621	<i>lateriflorus</i> of auth. ....	664
<i>syriaca</i> var. <i>kansasana</i> .....	621	<i>lateriflorus</i> var. <i>pendulus</i> ....	664
<i>tuberosa</i> .....	621	<i>lateriflorus</i> var. <i>pendulus</i> × <i>panto-</i>	
<i>tuberosa</i> f. <i>lutea</i> .....	621	<i>trichus</i> .....	665
<i>variegata</i> .....	622	<i>lateriflorus</i> var. <i>pendulus</i> × <i>prae-</i>	
<i>verticillata</i> .....	622	<i>altus</i> .....	665
<i>Asclepiodora viridis</i> .....	621	<i>lateriflorus</i> var. <i>thyrsoides</i> ....	664
<i>Ascyrum hypericoides</i> .....	599	<i>linariifolius</i> .....	665
Ash .....		<i>missouriensis</i> .....	664
Blue .....	618	<i>multiflorus</i> .....	663
Green .....	617	<i>multiflorus</i> var. <i>exiguus</i> .....	663
Prickly .....	587	<i>multiflorus</i> var. <i>pansus</i> .....	663
Pumpkin .....	618	New England .....	662
Red .....	617	<i>novae-angliae</i> .....	662
Wafer .....	587	<i>oblongifolius</i> .....	662
White .....	617	<i>oblongifolius</i> var. <i>rigidulus</i> ....	662
<i>Asimina triloba</i> .....	544	<i>paludosus</i> .....	661
<i>Asparagus</i> .....	503	<i>paniculatus</i> .....	664
<i>officinalis</i> .....	503	<i>paniculatus</i> var. <i>bellidiflorus</i> ...	664
Aspen .....		<i>paniculatus</i> var. <i>simplex</i> .....	664
Large-toothed .....	513	<i>pantotrichus</i> .....	664
Quaking .....	513	<i>parviceps</i> .....	663
<i>Aster amethystinus</i> .....	664	<i>parviceps</i> × <i>pilosus</i> var. <i>demotus</i> . 664	
<i>angustus</i> .....	664	<i>patens</i> .....	662
<i>anomalus</i> .....	662	<i>patens</i> var. <i>gracilis</i> .....	662
<i>azureus</i> .....	662	<i>pilosus</i> .....	663

	Page		Page
<i>pilosus</i> var. <i>demotus</i> .....	663	Balsam-apple, wild .....	653
<i>pilosus</i> var. <i>platyphyllus</i> .....	663	BALSAMINACEAE .....	544
<i>polyphyllus</i> .....	663	Baneberry, white .....	543
<i>praealtus</i> .....	664	<i>Baptisia australis</i> of auth. ....	575
<i>praealtus</i> var. <i>subasper</i> .....	664	<i>bracteata</i> of auth. ....	575
<i>ptarmicoides</i> .....	665	<i>leucantha</i> .....	575
<i>sagittifolius</i> .....	662	<i>leucophaea</i> .....	575
<i>salicifolius</i> .....	664	<i>leucophaea</i> × <i>vespertina</i> .....	575
<i>salicifolius</i> var. <i>subasper</i> .....	664	<i>leucophaea</i> var. <i>laevicaulis</i> ....	575
<i>sericeus</i> .....	662	<i>sphaerocarpa</i> .....	575
Tall White .....	664	<i>vespertina</i> .....	575
<i>Tradescanti</i> of auth. ....	665	<i>Barbarea stricta</i> .....	550
<i>turbinellus</i> .....	662	<i>vulgaris</i> .....	550
<i>vimineus</i> of auth. ....	664	<i>vulgaris</i> var. <i>longisiliquosa</i> ....	550
<i>vimineus</i> var. <i>subdumosus</i> ....	664	Barberry .....	
White Heath .....	663	American .....	544
White Prairie .....	664	European .....	544
Willow-leaved .....	664	Japanese .....	544
<i>Astragalus canadensis</i> .....	578	Barley .....	480
<i>caryocarpus</i> .....	578	Beardless .....	464
<i>distortus</i> .....	578	Meadow .....	464
<i>lotiflorus</i> .....	578	Barnyard Grass .....	470
<i>mexicanus</i> .....	578	Bastard Toadflax .....	524
<i>Atriplex argentea</i> .....	531	<i>Batodendron andrachnaeforme</i> ....	614
<i>patula</i> .....	531	<i>glaucescens</i> .....	614
<i>patula</i> var. <i>hastata</i> .....	531	Bayonet Grass .....	485
<i>rosea</i> .....	531	Bean, wild .....	584
August Flower .....	658	Bear Grass .....	502
<i>Aureolaria calycosa</i> .....	642	Beard Grass .....	478, 479
<i>flava</i> var. <i>macrantha</i> .....	642	Old Field .....	479
<i>grandiflora</i> var. <i>cinerea</i> .....	642	Prairie .....	479
<i>grandiflora</i> var. <i>pulchra</i> .....	642	Silvery .....	479
<i>pectinata</i> .....	642	Woolly .....	478
<i>Avena fatua</i> .....	465	Beard-tongue .....	639
<i>sativa</i> .....	465	Beckmannia <i>erucaeformis</i> of Am.	
<i>Avena</i> .....		auth. ....	470
Early Water .....	567	<i>Syzigachne</i> .....	470
Rough .....	567	Bedstraw .....	
<i>Axyris amaranthoides</i> .....	531	Fragrant .....	648
<i>Asalea nudiflora</i> .....	614	Northern .....	648
		Shining .....	648
B		Bee Balm .....	633
Bachelor's Button .....	679	Beech .....	517
<i>Bacopa acuminata</i> .....	641	Blue .....	517
<i>rotundifolia</i> .....	641	Beech-drops .....	645
Balloon Vine .....	594	Beef-steak Plant .....	636

	Page		Page
Beggar's Lice .....	579, 580, 627	Bignonia capreolata .....	645
Beggar's Ticks .....	579, 580	<i>radicans</i> .....	645
Beggar-ticks .....	673	BIGNONIACEAE .....	645
Swamp .....	674	Bindweed .....	623
Belamcanda chinensis .....	507	Black .....	528
Bellflower .....		Hedge .....	624
Creeping .....	653	Small .....	624
Tall .....	653	Birch, River .....	517
Bellis integrifolia .....	661	Bitter-sweet .....	592
Bellwort .....		Bitterweed .....	675
Large .....	501	Blackberry, High-bush .....	567
Small .....	501	Black-eyed Susan .....	664
Belvedere .....	529	Bladder-nut .....	592
Benne .....	645	Bladder-pod, Slender .....	644
Benzoïn aestivale .....	545	Bladderwort, Large .....	547
aestivale var. <i>pubescens</i> .....	545	Blazing Star .....	656
<i>melissaeifolium</i> .....	545	Blephilia ciliata .....	634
BERBERIDACEAE .....	544	<i>hirsuta</i> .....	634
Berberis canadensis .....	544	Blind Eyes .....	546
<i>Thunbergii</i> .....	545	Blood-leaf .....	533
<i>vulgaris</i> .....	544	Bloodroot .....	545
Berchemia scandens .....	595	Blue .....	
Bergia texana .....	600	Curly .....	630
Bergamot, wild .....	633	Devil .....	662
Berlandiera texana .....	667	Hearts .....	644
Bermuda Grass .....	470	Bluebell .....	542, 653
Berteroa incana .....	547	Bluebells .....	628
Betula nigra .....	517	Blueberry, Low-bush .....	614
BETULACEAE .....	516	Blue-eyed Grass .....	508
Bidens aristosa .....	674	Blue-eyed-Mary .....	639
<i>aristosa</i> var. <i>Fritcheyi</i> .....	674	Blue-joint .....	463
<i>aristosa</i> var. <i>mutica</i> .....	674	Blue-joint Grass .....	465
<i>Beckii</i> .....	674	Blue-stem .....	479
<i>bipinnata</i> .....	674	Blue-weed .....	629
<i>cernua</i> .....	674	Bluets .....	648
<i>cernua</i> var. <i>elliptica</i> .....	674	Small .....	648
<i>cernua</i> var. <i>integra</i> .....	674	Bodare .....	523
<i>comosa</i> .....	673	Boehmeria cylindrica .....	524
<i>comosa</i> var. <i>acuta</i> .....	673	Boltonia <i>asteroides</i> .....	661
<i>connata</i> .....	674	<i>asteroides</i> var. <i>decurrens</i> .....	661
<i>discoidea</i> .....	673	<i>diffusa</i> .....	661
<i>frondosa</i> .....	673	<i>latisquama</i> .....	661
<i>involverata</i> .....	674	Boneset .....	656
<i>laevis</i> .....	674	False .....	656
<i>vulgata</i> .....	673	Upland .....	656
<i>vulgata</i> var. <i>puberula</i> .....	673	BORAGINACEAE .....	627

	Page		Page
Bottle-brush .....	464	Brown-eyed Susan .....	669
Bouncing Bet .....	537	Brunnichia cirrhosa .....	523
Bouteloua curtipendula .....	471	Buchloë dactyloides .....	471
<i>gracilis</i> .....	471	Buchnera americana .....	644
<i>hirsuta</i> .....	471	Buck Brush .....	649
<i>oligostachya</i> .....	471	Buckeye	
Box Elder .....	593	Ohio .....	594
Brachyelytrum erectum .....	469	Red-flowered .....	594
<i>Bramia rotundifolia</i> .....	641	Buckthorn .....	595
Brasenia Schreberi .....	539	Southern .....	616
Brassica alba .....	548	Buckwheat .....	528
<i>arvensis</i> .....	548	Climbing .....	528
<i>campestris</i> .....	549	Climbing False .....	528
<i>japonica</i> .....	549	Buffalo Bur .....	637
<i>junceae</i> .....	548	Grass .....	471
<i>nigra</i> .....	549	Bug-seed .....	531, 532
<i>Brauneria pallida</i> .....	670	Bugbane .....	543
<i>paradoxa</i> .....	670	False .....	541
<i>purpurea</i> .....	670	Bugle Weed .....	635
Bread-root, Indian .....	576	Bull Nettle .....	636
Brickellia grandiflora .....	656	Bulrush	
Brier		Common .....	485
Cat .....	506	Great .....	484
Green .....	506	River .....	485
Sensitive .....	573	Bumelia lanuginosa .....	616
Brome Grass, Hungarian .....	458	<i>lycioides</i> .....	616
Bromus altissimus .....	458	Bunch-flower .....	500
<i>altissimus f. incanus</i> .....	458	Bupleurum rotundifolium .....	611
<i>arvensis</i> .....	459	Bur, Buffalo .....	637
<i>breviaristatus</i> .....	458	Bur Grass .....	478
<i>catharticus</i> .....	458	Bur-head, Creeping .....	457
<i>commutatus</i> .....	459	Bur-reed .....	454, 455
<i>hordeaceus</i> of auth. ....	458	Burdock .....	678
<i>incanus</i> .....	458	Burning Bush .....	592
<i>inermis</i> .....	458	Butter and Eggs .....	639
<i>japonicus</i> .....	459	Buttercup	
<i>latiglumis</i> .....	458	Creeping .....	540
<i>latiglumis f. incanus</i> .....	458	Meadow .....	541
<i>mollis</i> .....	458	Prairie .....	540
<i>purgans</i> .....	458	Swamp .....	540
<i>purgans</i> var. <i>latiglumis</i> .....	458	Butterfly-weed .....	621
<i>racemosus</i> .....	459	Butternut .....	514
<i>secalinus</i> .....	458	Butter-weed .....	677
<i>tectorum</i> .....	458	Button-bush .....	649
<i>unioloides</i> .....	458	Button-weed .....	648
Brooklime, American .....	642	Rough .....	648
Broussonetia papyrifera .....	523	Smooth .....	648

C	Page	Cane	Page
<i>Cabomba caroliniana</i> .....	539	Giant .....	458
<i>Caecalia atriplicifolia</i> .....	677	Sorghum .....	480
<i>reniformis</i> .....	677	Switch .....	458
<i>suaveolens</i> .....	677	<i>Cannabis sativa</i> .....	523
<i>tuberosa</i> .....	677	<i>Capnoides campestris</i> .....	546
CACTACEAE .....	604	CAPPARIDACEAE .....	552
<i>Caetus, Nipple</i> .....	604	CAPRIFOLIACEAE .....	650
<i>Calamagrostis canadensis</i> var. <i>Ma-</i>		<i>Capsella Bursa-pastoris</i> .....	548
<i>couniana</i> .....	465	Caraway .....	610
<i>canadensis</i> var. <i>typica</i> .....	465	<i>Cardamine arenicola</i> .....	551
<i>inexpansa</i> .....	465	<i>bulbosa</i> .....	551
<i>inexpansa</i> var. <i>brevior</i> .....	465	<i>Douglassii</i> .....	551
<i>Macouniana</i> .....	465	<i>parviflora</i> .....	551
Calamint .....	634	<i>parviflora</i> var. <i>arenicola</i> .....	551
<i>Calamovilfa longifolia</i> .....	465	<i>pennsylvanica</i> .....	551
<i>Callirhoe alceaoides</i> .....	599	Cardinal Flower .....	653
<i>Bushii</i> .....	599	<i>Cardiospermum Halicacabum</i> .....	594
<i>digitata</i> .....	599	<i>Carduus crispus</i> .....	678
<i>involuta</i> .....	598	<i>Carex aggregata</i> .....	488
<i>Papaver</i> .....	598	<i>albicans</i> .....	490
<i>triangulata</i> .....	598	<i>albursina</i> .....	491
CALLITRICHACEAE .....	590	<i>amphibola</i> .....	491
<i>Callitriche flexa</i> var. <i>Austini</i> ....	590	<i>anceps</i> .....	491
<i>heterophylla</i> .....	590	<i>annectens</i> .....	488
<i>Calopogon pulchellus</i> .....	509	<i>annectens</i> var. <i>zanthocarpa</i> ....	488
<i>Caltrop</i> .....	586	<i>arkansana</i> .....	487
<i>Calyceocarpum Lyoni</i> .....	544	<i>artitecta</i> .....	490
<i>Camelina microcarpa</i> .....	548	<i>Asa-Grayi</i> .....	494
<i>sativa</i> .....	548	<i>atherodes</i> .....	493
<i>Camassia esculenta</i> .....	502	<i>austrina</i> .....	487
<i>hyacinthina</i> .....	502	<i>Bicknellii</i> .....	489
<i>Campanula americana</i> .....	653	<i>blanda</i> .....	491
<i>rapunculoides</i> .....	653	<i>brachyglossa</i> .....	488
<i>rotundifolia</i> .....	653	<i>brevior</i> .....	489
CAMPANULACEAE .....	653	<i>Bushii</i> .....	492
Campion .....		<i>Buxbaumii</i> .....	493
Bladder .....	536	<i>camporum</i> .....	487
Red .....	536	<i>Careyana</i> .....	490
Starry .....	537	<i>caroliniana</i> .....	492
White .....	536	<i>cephaloidea</i> .....	488
<i>Campsis radicans</i> .....	645	<i>cephalophora</i> .....	487
Canary Grass .....	471	<i>cherokeensis</i> .....	492
Cancer-root .....	639	<i>colorata</i> .....	490
Small .....	645	<i>comosa</i> .....	494
Cancer-weed .....	633	<i>complanata</i> .....	492
Cancerwort .....	639	<i>conjuncta</i> .....	488

	Page		Page
<i>convoluta</i> .....	487	<i>lanuginosa</i> .....	493
<i>Crawei</i> .....	491	<i>laxiculmis</i> .....	491
<i>crinita</i> .....	493	<i>laxiculmis</i> var. <i>copulata</i> .....	491
<i>crinita</i> var. <i>gynandra</i> .....	493	<i>laxiflora</i> .....	491
<i>cristata</i> .....	489	<i>laxiflora</i> var. <i>blanda</i> .....	491
<i>cristatella</i> .....	489	<i>laxiflora</i> var. <i>gracillima</i> .....	491
<i>crus-carvi</i> .....	488	<i>laxiflora</i> var. <i>latifolia</i> .....	491
<i>Davisii</i> .....	492	<i>laxiflora</i> var. <i>patulifolia</i> .....	491
<i>decomposita</i> .....	488	<i>laxiflora</i> var. <i>varians</i> .....	491
<i>digitalis</i> .....	490	<i>Leavenworthii</i> .....	487
<i>eburnea</i> .....	490	<i>leptalea</i> .....	492
<i>Emmonsii</i> .....	490	<i>louisianica</i> .....	494
<i>Emoryi</i> .....	493	<i>Lunelliana</i> .....	487
<i>festuaceae</i> .....	489	<i>lupuliformis</i> .....	494
<i>festuaceae</i> var. <i>brevior</i> .....	489	<i>lupulina</i> .....	494
<i>flaccosperma</i> .....	492	<i>lupulina</i> var. <i>pedunculata</i> .....	494
<i>Frankii</i> .....	494	<i>lurida</i> .....	494
<i>gigantea</i> .....	495	<i>lurida</i> var. <i>flaccida</i> .....	494
<i>glaucoidea</i> .....	492	<i>macrocolea</i> .....	492
<i>gracillima</i> .....	492	<i>Meadii</i> .....	490
<i>granularis</i> .....	491	<i>mesochorea</i> .....	487
<i>granularis</i> var. <i>Halesana</i> .....	491	<i>microrhyncha</i> .....	490
<i>gravida</i> .....	487	<i>mirabilis</i> .....	489
<i>gravida</i> var. <i>laxifolia</i> .....	487	<i>mirabilis</i> var. <i>perlonga</i> .....	489
<i>Grayii</i> var. <i>hispidula</i> .....	494	<i>molesta</i> .....	489
<i>grisea</i> .....	491	<i>monte</i> .....	494
<i>grisea</i> var. <i>angustifolia</i> .....	491	<i>Muhlenbergii</i> .....	487
<i>grisea</i> var. <i>globosa</i> .....	492	<i>Muhlenbergii</i> var. <i>enervis</i> .....	487
<i>grisea</i> var. <i>rigida</i> .....	491	<i>muskingumensis</i> .....	489
<i>gynandra</i> .....	493	<i>nigro-marginata</i> .....	490
<i>Halei</i> .....	494	<i>normalis</i> .....	489
<i>Haydeni</i> .....	493	<i>oklahomensis</i> .....	488
<i>heliophila</i> .....	490	<i>oligocarpa</i> .....	491
<i>hirsutella</i> .....	492	<i>oxylepis</i> .....	492
<i>hirtifolia</i> .....	490	<i>pennsylvanica</i> of auth. in part ..	490
<i>Hitchcockiana</i> .....	491	<i>pennsylvanica</i> var. <i>digyna</i> .....	490
<i>hormathodes</i> .....	489	<i>physorhyncha</i> .....	490
<i>hyalinolepis</i> .....	493	<i>plana</i> .....	487
<i>hystericina</i> .....	494	<i>praegracilis</i> .....	487
<i>impressa</i> .....	493	<i>projecta</i> .....	489
<i>interior</i> .....	488	<i>pubescens</i> .....	490
<i>intumescens</i> .....	494	<i>retroflexa</i> .....	487
<i>Jamesii</i> .....	489	<i>retroflexa</i> var. <i>texensis</i> .....	487
<i>Joorii</i> .....	492	<i>riparia</i> .....	493
<i>lacustris</i> .....	493	<i>riparia</i> var. <i>impressa</i> .....	493
<i>laeviconica</i> .....	493	<i>riparia</i> var. <i>lacustris</i> .....	493
<i>laevivaginata</i> .....	488	<i>rosea</i> .....	487



	Page		Page
<i>roses</i> of auth. ....	487	<i>Carpinus caroliniana</i> .....	517
<i>rosea</i> var. <i>minor</i> .....	487	Carrión-flower .....	505
<i>Sartwellii</i> .....	487	Carrot .....	612
<i>scabrata</i> .....	493	<i>Carum Carvi</i> .....	610
<i>Schweinitzii</i> .....	494	<i>Carya alba</i> .....	515
<i>scirpoides</i> .....	488	<i>alba</i> var. <i>ficoides</i> .....	515
<i>scoparia</i> .....	489	<i>alba</i> var. <i>ovoidea</i> .....	515
<i>scoparia</i> var. <i>moniliformis</i> .....	489	<i>alba</i> var. <i>subcoreacea</i> .....	515
<i>setacea</i> var. <i>ambigua</i> .....	488	<i>aquatica</i> .....	514
<i>Shortiana</i> .....	492	<i>Buckleyi</i> var. <i>arkansana</i> .....	515
<i>Shriveri</i> .....	491	<i>Buckleyi</i> var. <i>villosa</i> .....	515
<i>siccata</i> .....	487	<i>cordiformis</i> .....	514
<i>sparganioides</i> .....	488	<i>cordiformis</i> var. <i>latifolia</i> .....	514
<i>squarrosa</i> .....	494	<i>glabra</i> .....	515
<i>stipata</i> .....	488	<i>glabra</i> var. <i>villosa</i> .....	515
<i>straminea</i> .....	489	<i>illinoensis</i> .....	514
<i>straminea</i> of Am. auth. ....	489	<i>laciniosa</i> .....	514
<i>stricta</i> .....	493	<i>microcarpa</i> .....	516
<i>stricta</i> var. <i>angustata</i> .....	493	<i>ovalis</i> .....	515
<i>stricta</i> var. <i>decora</i> .....	493	<i>ovalis</i> var. <i>obcordata</i> .....	516
<i>tenera</i> .....	489	<i>ovalis</i> var. <i>obcordata</i> f. <i>vestita</i> ..	516
<i>tetanica</i> .....	490	<i>ovalis</i> var. <i>obovalis</i> .....	515
<i>tetanica</i> var. <i>Meadii</i> .....	490	<i>ovalis</i> var. <i>odorata</i> .....	516
<i>tetanica</i> var. <i>Woodii</i> .....	490	<i>ovata</i> .....	514
<i>texensis</i> .....	487	<i>ovata</i> var. <i>ellipsoidalis</i> .....	514
<i>torta</i> .....	493	<i>Pecan</i> .....	514
<i>triangularis</i> .....	488	<i>tomentosa</i> .....	515
<i>tribuloides</i> .....	489	<i>tomentosa</i> f. <i>ficoides</i> .....	515
<i>tribuloides</i> var. <i>sangamonensis</i> ..	489	<i>tomentosa</i> f. <i>ovoidea</i> .....	515
<i>triceps</i> var. <i>hirsuta</i> .....	492	<i>tomentosa</i> var. <i>subcoreacea</i> .....	515
<i>triceps</i> var. <i>Smithii</i> .....	492	CARYOPHYLLACEAE .....	534
<i>trichocarpa</i> .....	493	<i>Cassia Chamaecrista</i> of auth. ....	574
<i>trichocarpa</i> var. <i>aristata</i> .....	493	<i>Chamaecrista</i> var. <i>robusta</i> .....	574
<i>trichocarpa</i> var. <i>Deweyi</i> .....	493	<i>depressa</i> .....	574
<i>trichocarpa</i> var. <i>imberbis</i> .....	493	<i>fasciculata</i> .....	574
<i>typhina</i> .....	494	<i>fasciculata</i> var. <i>depressa</i> .....	574
<i>typhinoides</i> .....	494	<i>fasciculata</i> f. <i>Jenseni</i> .....	574
<i>umbellata</i> .....	490	<i>fasciculata</i> var. <i>robusta</i> .....	574
<i>varia</i> .....	490	<i>marilandica</i> .....	574
<i>varia</i> var. <i>colorata</i> .....	490	<i>Medagerei</i> .....	574
<i>vesicaria</i> .....	494	<i>nictitans</i> .....	575
<i>vesicaria</i> var. <i>monile</i> .....	494	<i>occidentalis</i> .....	574
<i>virescens</i> .....	492	<i>Tora</i> .....	574
<i>vulpinoidea</i> .....	488	<i>Castalia odorata</i> .....	538
<i>zanthocarpa</i> var. <i>annectens</i> .....	488	<i>tuberosa</i> .....	538
<i>Woodii</i> .....	490	<i>Castanea ozarkensis</i> .....	517
Carpet-weed .....	534	<i>pumila</i> of auth. in part .....	517

	Page		Page
Castilleja coccinea .....	644	solstitialis .....	679
coccinea f. lutescens .....	644	vochinensis .....	679
purpurea .....	644	Centaurium calycosum .....	619
sessiliflora .....	644	texense .....	619
Castor-oil Plant .....	589	Centaurium .....	619
Catalpa .....	645	Centunculus minimus .....	616
bignonioides .....	645	Cephalanthus occidentalis .....	649
speciosa .....	645	occidentalis var. pubescens .....	649
Cat-brier .....	506	Cerastium arvense var. oblongi-	
Catchfly .....		folium .....	536
Night-flowering .....	536	brachypodium .....	535
Royal .....	537	nutans .....	535
Sleepy .....	536	viscosum .....	536
Catch-fly Grass .....	471	vulgatum of auth. ....	535
Catnip .....	632	vulgatum var. hirsutum .....	535
Cat-tail .....		CERATOPHYLLACEAE .....	538
Common .....	454	Ceratophyllum demersum .....	538
Narrow-leaved .....	454	Cercis canadensis .....	375
Caulophyllum thalictroides .....	544	Chaerophyllum procumbens .....	609
Cayaponia grandifolia .....	652	procumbens var. Shortii .....	609
Ceanothus americanus .....	595	Shortii .....	609
ovatus .....	595	Tainturieri var. floridanum ....	610
ovatus var. pubescens .....	595	texanum .....	609
Cedar .....		Chaffweed .....	616
Red .....	454	Chamaecrista depressa .....	574
White .....	454	fasciculata .....	574
Celandine .....	545	Chaetopappa asteroides .....	661
CELASTRACEAE .....	592	Chamomile .....	
Celastrus scandens .....	592	Corn .....	676
Celtis georgiana .....	523	Yellow .....	676
laevigata .....	522	Wild .....	676
laevigata var. texana .....	522	Charlock .....	548
mississippiensis .....	522	Cheat .....	458
occidentalis .....	522	Cheeses .....	598
occidentalis var. canina .....	522	Chelidonium majus .....	545
occidentalis var. crassifolia ....	522	Chelone glabra .....	640
pumila .....	523	obliqua var. speciosa .....	640
pumila var. Deamii .....	523	CHENOPODIACEAE .....	528
pumila var. georgiana .....	523	Chenopodium album .....	529
Cenchrus carolinianus .....	478	album of auth. ....	529
pauciflorus .....	478	album f. lanceolatum .....	529
Centaurea americana .....	679	album f. viride .....	529
Cyanus* .....	679	album var. viride .....	529
maculosa .....	679	ambrosioides .....	529
melitensis .....	679	ambrosioides var. anthelminticum	529
pieris .....	679	Berlandieri .....	530

	Page		Page
Berlandieri subsp. Boscianum ..	530	Chervil	
Berlandieri subsp. Zschackei var.		Hemlock .....	612
farinosum .....	530	Wild .....	609
Berlandieri subsp. Zschackei var.		Chess .....	458
foetens .....	530	Field .....	459
Berlandieri subsp. Zschackei var.		Soft .....	458
typicum f. angustius .....	530	Wild .....	458
Berlandieri subsp. Zschackei var.		Chickweed .....	535
typicum f. latifolium .....	530	Clammy .....	536
Berlandieri subsp. Zschackei var.		Forked .....	534
typicum f. neglectum .....	530	Great .....	535
Berlandieri subsp. Zschackei var.		Nodding .....	535
typicum f. pedunculare .....	530	Chicory .....	680
Boscianum .....	530	Chinquapin .....	517
Botrys .....	529	Water .....	538
Bushmanum .....	530	Chionanthus virginica .....	618
capitatum .....	529	Chittim-wood .....	616
carinatum .....	529	Chloris elegans .....	471
daecotium .....	531	verticillata .....	471
gigaspermum .....	529	virgata .....	471
gigaspermum var. Standley-		Christmas Holly .....	592
anum .....	529	Chrosperma muscaetoxicum .....	500
glaucophyllum .....	530	Chrysanthemum Leucanthemum ..	676
glaucum .....	529	Leucanthemum var. pinnatifidum	676
hybridum of Am. auth. ....	529	Chrysopsis Berlandieri .....	658
ineanum .....	531	camporum .....	658
leptophyllum .....	531	pilosa .....	658
leptophyllum .....	531	villosa of auth. ....	658
leptophyllum var. leptophylloides	531	villosa var. canescens .....	658
leptophyllum var. oblongifolium.	531	Cichorium Intybus .....	680
missouriense .....	530	Cicuta maculata .....	610
missouriense var. Bushianum ..	530	Cigar Tree .....	645
murale .....	531	Cimicifuga racemosa .....	543
paganum .....	529	Cinna arundinacea .....	466
paganum .....	530	Cinquefoil .....	566
pratericola .....	530	Circaea latifolia .....	608
Standleyanum .....	530	lutetiana of Am. auth. ....	608
urbicum .....	531	Cirsium altissimum .....	679
urbicum var. intermedium .....	531	arvense .....	679
x variabile var. Murrii .....	531	discolor .....	678
Cherry		Hilli .....	678
Choke .....	572	lowense .....	679
Ground .....	637, 638	lanceolatum .....	678
Indian .....	595	muticum .....	679
Perfumed .....	573	ochrocentrum var. Helleri .....	679
Sour .....	573	odoratum .....	678
Wild .....	572	pumilum .....	678

	Page		Page
undulatum var. megacephalum ..	678	Yellow Hop .....	576
virginianum .....	679	Yellow Sweet .....	576
<i>Cissus Ampelopsis</i> .....	596	Club-rush, Hedgehog .....	482
<i>arborea</i> .....	596	<i>Cocculus carolinus</i> .....	544
<i>incisa</i> .....	596	Cocklebur .....	668
CISTACEAE .....	601	Cockspur Thorn .....	567
<i>Citrullus vulgaris</i> .....	653	Coco Grass .....	480
<i>Cladothrix lanuginosa</i> .....	533	<i>Coelorachis cylindrica</i> .....	480
<i>Cladrastis lutea</i> .....	575	Coffee-tree, Kentucky .....	573
Clammy Hedge Hyssop .....	641	Coffee Weed .....	574
Clammy-weed .....	552	<i>Cogswellia daucifolia</i> .....	611
<i>Claytonia multicaulis</i> var. <i>robusta</i> ..	537	Cohosh, Blue .....	544
<i>robusta</i> .....	537	<i>Collinsia verna</i> .....	639
<i>virginica</i> .....	537	<i>violacea</i> .....	639
<i>virginica</i> f. <i>robusta</i> .....	537	<i>Collinsonia canadensis</i> .....	636
Clear-eye .....	633	<i>Collomia linearis</i> .....	626
Clearweed .....	524	Columbine, Wild .....	542
Cleavers .....	648	Columbo, American .....	619
<i>Clematis crispa</i> .....	542	<i>Comandra Richardsiana</i> .....	524
<i>Fremontii</i> .....	542	<i>umbellata</i> .....	524
<i>missouriensis</i> .....	542	Comfrey .....	628
<i>Pitcheri</i> .....	542	<i>Commelina caroliniana</i> .....	497
<i>versicolor</i> .....	542	<i>communis</i> .....	496
<i>Viorna</i> .....	542	<i>crispa</i> .....	497
<i>virginiana</i> .....	542	<i>erecta</i> .....	497
<i>virginiana</i> var. <i>missouriensis</i> ..	542	<i>erecta</i> var. <i>crispa</i> .....	497
<i>Cleome serrulata</i> .....	552	<i>hirtella</i> of auth. ....	497
<i>spinosa</i> .....	552	<i>longicaulis</i> .....	497
<i>Clitoria mariana</i> .....	584	<i>nudiflora</i> .....	497
Clover .....		<i>virginica</i> .....	497
<i>Alsike</i> .....	576	<i>virginica</i> of auth. ....	497
<i>Buffalo</i> .....	575	COMMELINACEAE .....	496
<i>Running</i> .....	576	Compass Plant .....	646
<i>Bur</i> .....	576	COMPOSITAE .....	654
<i>Bush</i> .....	581	Cone-flower, Purple .....	670
<i>Hairy</i> .....	582	<i>Conioselinum chinense</i> .....	612
<i>Corean</i> .....	582	<i>Conium maculatum</i> .....	610
<i>Crimson</i> .....	575	<i>Conoclea multifida</i> .....	641
<i>Japanese</i> .....	582	<i>Conringia orientalis</i> .....	549
<i>Little Hop</i> .....	576	CONVOLVULACEAE .....	623
<i>Low Hop</i> .....	576	<i>Convolvulus arvensis</i> .....	624
<i>Prairie</i> .....	577	<i>arvensis</i> var. <i>obtusifolius</i> .....	624
<i>White</i> .....	578	<i>japonicus</i> .....	624
<i>Rabbit-foot</i> .....	575	<i>sepium</i> .....	624
<i>Red</i> .....	575	<i>sepium</i> var. <i>fraterniflorus</i> .....	624
<i>White</i> .....	576	<i>sepium</i> var. <i>pubescens</i> .....	624
<i>Sweet</i> .....	576	<i>spithameus</i> .....	623

	Page		Page
Coral-root .....	510	flavula .....	546
Crested .....	511	mierantha .....	546
Small .....	510	montanum .....	547
Yellow .....	510	Corylus americana .....	516
Corallorrhiza odontorhiza .....	510	americana var. indehiscens .....	516
trifida .....	510	americana f. missouriensis .....	516
Wisteriana .....	510	cornuta .....	516
Coreopsis crassifolia .....	673	rostrata .....	516
grandiflora .....	673	Cotinus americanus .....	591
lanceolata .....	673	Cottonwood .....	513
lanceolata var. villosa .....	673	Swamp .....	513
palmata .....	673	Couch Grass .....	462
pubescens .....	673	Cow Parsnip .....	612
tinctoria .....	672	Cowbane .....	610, 612
tripteris .....	673	Cow-herb .....	537
tripteris var. Deamii .....	673	Cowslip, Virginia .....	628
Coriander .....	611	Crab, American .....	557
Coriandrum sativum .....	611	Crab-apple, Wild .....	556
Corispermum hyssopifolium .....	532	Cranesbill .....	586
nitidum .....	531	CRASSULACEAE .....	552
orientale var. emarginatum .....	532	Crataegus acutifolia .....	558
Cork Wood .....	513	albathera .....	557
Corn, Indian .....	480	angulata .....	562
Corn Cockle .....	536	angustata .....	560
Gromwell .....	628	aperta .....	562
Salad, Beaked .....	652	apiifolia .....	564
Spurrey .....	534	apiifolia var. flavanthera .....	564
CORNACEAE .....	612	arborea .....	559
Cornus alternifolia .....	613	arborescens .....	560
Amomum of auth. .....	613	arcana .....	562
asperifolia .....	613	aspera .....	563
femina .....	613	atrorubens .....	561
femina of auth. .....	613	barbata .....	559
florida .....	612	barrettiana .....	558
florida f. rubra .....	612	bellica .....	558
florida var. rubra .....	612	biltmoreana .....	561
obliqua .....	613	brachypoda .....	562
paniculata .....	613	bracteata .....	562
Purpurea .....	613	calliantha .....	562
racemosa .....	613	callicarpa .....	564
stricta .....	613	calophylla .....	557
Coronilla varia .....	579	calpodendron .....	564
Coronopus didymus .....	548	calpodendron var. hispidula .....	564
Corydalis aurea .....	547	calpodendron var. obesa .....	564
aurea var. occidentalis .....	547	campestris .....	565
campestris .....	546	candens .....	557
crystallina .....	546	coccinioides .....	564

	Page		Page
<i>collina</i> .....	560	<i>incaedua</i> .....	565
<i>collina</i> var. <i>secta</i> .....	560	<i>infesta</i> .....	559
<i>collina</i> var. <i>sordida</i> .....	560	<i>insperata</i> .....	564
<i>collina</i> var. <i>succincta</i> .....	560	<i>intermixta</i> .....	558
<i>collina</i> x <i>viridis</i> .....	565	<i>jasperensis</i> .....	558
<i>conjuncta</i> .....	562	Kelloggi .....	563
<i>consueta</i> .....	557	<i>lanceolata</i> .....	561
<i>cordata</i> .....	564	<i>lanigera</i> .....	563
<i>crus-galli</i> .....	557	<i>lanuginosa</i> .....	563
<i>crus-galli</i> var. <i>barrettiana</i> .....	558	<i>larga</i> .....	560
<i>crus-galli</i> var. <i>bellica</i> .....	558	<i>lasiantha</i> .....	563
<i>crus-galli</i> var. <i>exigua</i> .....	557	<i>latebrosa</i> .....	560
<i>crus-galli</i> var. <i>leptophylla</i> .....	558	<i>lawrencensis</i> .....	558
<i>crus-galli</i> var. <i>macra</i> .....	557	<i>leioclada</i> .....	561
<i>crus-galli</i> var. <i>pachyphylla</i> .....	558	<i>leptophylla</i> .....	558
<i>crus-galli</i> f. <i>truncata</i> .....	557	Lettermanii .....	560
Danielsi .....	559	locuples .....	563
Danielsi f. <i>glabra</i> .....	559	<i>ludoviciensis</i> .....	558
<i>dasyphylla</i> .....	563	<i>lutensis</i> .....	561
<i>Davisii</i> .....	560	Mackenzii .....	562
<i>Dawsoniana</i> .....	561	Mackenzii var. <i>bracteata</i> .....	562
<i>declivitatis</i> .....	564	<i>macra</i> .....	557
<i>depressa</i> .....	562	<i>macracantha</i> var. <i>neofluvialis</i> .....	565
<i>discolor</i> .....	558	<i>macrophylla</i> .....	563
<i>disjuneta</i> .....	562	<i>macropoda</i> .....	560
<i>disjuneta</i> var. <i>magnifolia</i> .....	562	<i>magnifolia</i> .....	562
<i>dispensa</i> .....	563	Margaretta .....	561
<i>dumetosa</i> .....	563	Marshallii .....	564
<i>efferta</i> .....	557	<i>missouriensis</i> .....	565
<i>effulgens</i> .....	557	<i>mollicula</i> .....	564
Engelmannii .....	559	<i>mollis</i> .....	563
Engelmannii f. <i>nuda</i> .....	559	<i>mollis</i> f. <i>dumetosa</i> .....	563
Engelmannii x <i>uniflora</i> .....	565	<i>monosperma</i> .....	557
<i>ensifera</i> .....	565	<i>munita</i> .....	559
<i>erecta</i> .....	558	<i>neobushii</i> .....	561
<i>exigua</i> .....	557	<i>neofluvialis</i> .....	565
<i>fecunda</i> .....	559	<i>nitens</i> .....	561
<i>ferox</i> .....	557	<i>nitida</i> .....	561
<i>furcata</i> .....	560	<i>noelensis</i> .....	563
Gattingeri .....	562	<i>nuda</i> .....	565
<i>glabrifolia</i> .....	561	<i>obesa</i> .....	564
<i>globosa</i> .....	564	<i>obscura</i> .....	564
<i>hamata</i> .....	557	<i>onusta</i> .....	562
<i>hannibalensis</i> .....	559	<i>ovata</i> .....	561
<i>hirtella</i> .....	559	<i>pachyphylla</i> .....	558
<i>hirtiflora</i> .....	560	<i>padifolia</i> .....	561
<i>hispidula</i> .....	564	<i>padifolia</i> var. <i>incarnata</i> .....	561



	Page		Page
Palmeri .....	558	<i>tantula</i> .....	558
<i>paradoxa</i> .....	559	<i>tardiflora</i> .....	557
<i>parviflora</i> .....	558	<i>tenuis</i> .....	559
<i>Parkae</i> .....	557	<i>tenuisepala</i> .....	558
<i>patrum</i> .....	562	<i>tenuispina</i> .....	559
<i>Pechiana</i> .....	560	<i>tomentosa</i> .....	564
<i>permera</i> .....	557	<i>transmississippiensis</i> .....	563
<i>pertomentosa</i> .....	565	<i>Treleasei</i> .....	563
<i>Phaenopyrum</i> .....	564	<i>trianthophora</i> .....	564
<i>phaeroneura</i> .....	559	<i>truncata</i> .....	557
<i>pilifera</i> .....	559	<i>tumida</i> .....	562
<i>platycarpa</i> .....	563	<i>umbrosa</i> .....	563
<i>polyclada</i> .....	557	<i>uniflora</i> .....	564
<i>pruinosa</i> .....	562	<i>Vailiae</i> .....	565
<i>pruinosa f. angulata</i> .....	562	<i>valens</i> .....	563
<i>pruinosa var. brachypoda</i> .....	562	<i>vallicola</i> .....	559
<i>pudens</i> .....	565	<i>verna</i> .....	563
<i>pyracanthoides var. arborea</i> ..	559	<i>verruculosa</i> .....	560
<i>pyriformis</i> .....	563	<i>vicina</i> .....	560
<i>regalis</i> .....	559	<i>villicarpa</i> .....	561
<i>regalis var. paradoxa</i> .....	559	<i>villiflora</i> .....	559
<i>rigida</i> .....	562	<i>viridis</i> .....	560
<i>rotunda</i> .....	558	<i>viridis var. atrorubens</i> .....	561
<i>rubicundula</i> .....	562	<i>viridis var. lanceolata</i> .....	561
<i>rubrifolia</i> .....	558	<i>viridis var. lutea</i> .....	561
<i>rubripala</i> .....	558	<i>viridis var. ovata</i> .....	561
<i>rudis</i> .....	557	<i>Crepis capillaris</i> .....	681
<i>rugosa</i> .....	562	<i>setosa</i> .....	681
<i>seclusa</i> .....	562	<b>Cress</b>	
<i>secta</i> .....	560	<i>Lake</i> .....	550
<i>seducta</i> .....	562	<i>Marsh Water</i> .....	550
<i>setosa</i> .....	559	<i>Mouse-ear</i> .....	549
<i>severa</i> .....	557	<i>Penny</i> .....	547
<i>sicca</i> .....	561	<i>Rock</i> .....	561
<i>simulata</i> .....	565	<i>Spring</i> .....	551
<i>sordida</i> .....	560	<i>Water</i> .....	550
<i>sordida var. villosa</i> .....	560	<i>Winter</i> .....	550
<i>spathulata</i> .....	564	<i>Yellow</i> .....	550
<i>spathulata var. flavanthera</i> ..	564	<i>Crocianthemum majus</i> .....	601
<i>speciosa</i> .....	564	<i>Cross-vine</i> .....	645
<i>spinulosa</i> .....	564	<i>Crosswort</i> .....	616
<i>strongylophylla</i> .....	557	<i>Crotalaria sagittalis</i> .....	575
<i>succincta</i> .....	560	<i>Croton capitatus</i> .....	588
<i>sucida</i> .....	560	<i>Engelmanni</i> .....	588
<i>succulenta</i> .....	565	<i>glandulosus var. septentrionalis</i> ..	588
<i>succulenta var. pertomentosa</i> ..	565	<i>monanthogynus</i> .....	588
<i>swanensis</i> .....	565	<i>texensis</i> .....	588

	Page		Page
<i>Crotonopsis elliptica</i> .....	588	<i>Cynoglossum officinale</i> .....	627
<i>linearis</i> .....	588	<i>virginianum</i> .....	627
<i>linearis</i> of auth. ....	588	<i>Cynosciadium digitatum</i> .....	611
Crowfoot .....		<i>pinnatum</i> .....	611
Cursed .....	539	<i>Cynthia virginica</i> .....	680
Hooked .....	540	CYPERACEAE .....	480
Seaside .....	539	<i>Cyperus acuminatus</i> .....	481
Small-flowered .....	540	<i>aristatus</i> .....	480
White Water .....	539	<i>Bushii</i> .....	482
Yellow Water .....	539	<i>compressus</i> .....	480
Crown-beard, Wild .....	672	<i>diandrus</i> .....	480
CRUCIFERAE .....	547	<i>dipsaciformis</i> .....	482
<i>Cryptotaenia canadensis</i> .....	610	<i>echinatus</i> .....	482
Cucumber, One-seeded Bur .....	652	<i>Engelmanni</i> .....	481
Cucumber-root, Indian .....	503	<i>erythrorhizos</i> .....	481
Cucumber Tree .....	544	<i>erythrorhizos</i> var. <i>pumilus</i> .....	481
Cucumber Vine, Wild .....	653	<i>esculentus</i> .....	481
<i>Cucumis Melo</i> .....	653	<i>esculentus</i> var. <i>angustispicatus</i> ..	481
<i>sativus</i> .....	653	<i>esculentus</i> var. <i>longispicatus</i> ....	481
<i>Cucurbita foetidissima</i> .....	652	<i>ferax</i> .....	481
Pepo .....	653	<i>ferax</i> of auth. ....	481
CUCURBITACEAE .....	652	<i>ferruginescens</i> .....	481
Cudweed .....	666	<i>filiculmis</i> .....	482
Culver's-root .....	641	<i>filiculmis</i> var. <i>macilentus</i> .....	482
<i> Cunila origanoides</i> .....	635	<i>flavescens</i> .....	480
Cup Plant .....	667	<i>Gatesii</i> .....	480
Cup-seed .....	544	<i>globulosus</i> .....	482
<i>Cuphea petiolata</i> .....	605	<i>Halei</i> .....	481
Currant .....		<i>Hallii</i> .....	481
Flowering .....	555	<i>inflexus</i> .....	480
Indian .....	650	<i>lancastrensis</i> .....	482
<i>Cuscuta arvensis</i> .....	624	<i>ovularis</i> .....	482
<i>Cephalanthi</i> .....	624	<i>ovularis</i> var. <i>robustus</i> .....	482
<i>compacta</i> .....	625	<i>pseudovegetus</i> .....	481
<i>Coryli</i> .....	624	<i>refractus</i> .....	482
<i>cuspidata</i> .....	624	<i>retrofractus</i> .....	482
<i>glomerata</i> .....	624	<i>retrofractus</i> of auth. ....	482
<i>Gronovii</i> of auth. ....	624	<i>rivularis</i> .....	480
<i>Gronovii</i> var. <i>vulgivaga</i> .....	624	<i>Schweinitzii</i> .....	481
<i>obtusifolia</i> .....	624	<i>speciosus</i> .....	481
<i>pentagona</i> .....	624	<i>strigosus</i> .....	481
<i>pentagona</i> var. <i>calycina</i> .....	624	<i>strigosus</i> var. <i>capitatus</i> .....	481
<i>Polygonorum</i> .....	624	<i>strigosus</i> var. <i>compositus</i> .....	481
<i>Cycloloma atriplicifolium</i> .....	528	<i>strigosus</i> var. <i>elongatus</i> .....	481
<i>Cymbia occidentalis</i> .....	680	<i>strigosus</i> var. <i>robustior</i> .....	481
<i>Cynodon Dactylon</i> .....	470	Cypress .....	
		Bald .....	454

	Page		Page
Standing .....	529, 626	Treleasei .....	543
Summer .....	528	tricornis .....	543
Cypress Vine .....	623	Dentaria laciniata .....	551
Cypripedium candidum .....	508	laciniata var. integra .....	551
Miscanthus .....	508	Descurainia canescens .....	549
parviflorum .....	508	incisa .....	549
parviflorum var. pubescens .....	508	intermedia .....	549
Reginae .....	508	Sophia .....	549
<b>D</b>			
Daedylis glomerata .....	462	Desmanthus illinoensis .....	573
Daisy .....		leptolobus .....	573
Michaelmas .....	665	Desmodium acuminatum .....	579
Ox-eye .....	676	bracteosum .....	580
Purple .....	662	bracteosum var. longifolium .....	580
Western .....	661	canadense .....	581
Dalea alopecuroides .....	577	canadense x Dillenii .....	581
enneandra .....	577	canescens .....	580
Dandelion .....	680	canescens var. hirsutum .....	580
Dwarf .....	680	Dillenii .....	580
False .....	682	grandiflorum .....	579
Red-seeded .....	680	illinoense .....	580
Danthonia spicata .....	465	laevigatum .....	580
Darnel .....	464	marilandicum .....	581
Dasistoma macrophylla .....	642	nudiflorum .....	579
Dasystoma calycosa .....	643	obtusum .....	581
flava .....	643	ochroleucum .....	580
pectinata .....	643	paniculatum .....	580
serrata .....	642	paniculatum var. angustifolium .....	580
Datura Metel .....	638	paniculatum var. pubens .....	580
Stramonium .....	638	pauciflorum .....	579
Tatula .....	638	rigidum .....	581
Daucus Carota .....	612	rotundifolium .....	580
pusillus .....	612	sessilifolium .....	580
Day-flower .....	497	viridiflorum .....	580
Creeping .....	496	Devil's-claws .....	646
Day Lily .....	502	Dewberry .....	568
Deer-grass .....	605	Dianthera americana .....	646
Deerberry .....	614	ovata .....	646
Delphinium Ajacis .....	543	Dianthus Armeria .....	536
azureum .....	543	barbatus .....	536
azureum var. Nortonianum .....	543	deltoides .....	536
comporum .....	543	Diapedium brachiatum .....	646
Nortonianum .....	543	Diarina festucoides .....	461
Penardi .....	543	Diarrhena americana .....	461
		diandra .....	461
		Dicentra canadensis .....	546
		Cucullaria .....	546

	Page		Page
<i>Dicliptera brachiata</i> .....	646	<i>Dodecatheon Meadia</i> .....	616
<i>Didiplis diandra</i> .....	604	Dogbane .....	620
<i>Digitaria filiformis</i> .....	472	Pink-flowered .....	620
<i>filiformis</i> var. <i>villosa</i> .....	472	Dog Fennel .....	676
<i>humifusa</i> .....	472	Yellow .....	675
<i>Ischaemum</i> .....	472	Dogwood .....	
<i>sanguinalis</i> .....	472	Alternate-leaved .....	612
<i>sanguinalis</i> var. <i>marginata</i> .....	472	Flowering .....	612
<i>villosa</i> .....	472	Gray .....	612
Dill .....	612	Rough-leaved .....	612
<i>Diodia teres</i> .....	648	Stiff .....	612
<i>virginiana</i> .....	648	Swamp .....	612
<i>Dioscorea glauca</i> .....	506	<i>Dolicholus latifolius</i> .....	585
<i>quaternata</i> .....	506	<i>tomentosus</i> .....	585
<i>villosa</i> .....	506	<i>Draba brachycarpa</i> .....	547
<i>villosa</i> var. <i>glabrifolia</i> .....	506	<i>caroliniana</i> .....	547
DIOSCOREACEAE .....	506	<i>caroliniana</i> var. <i>micrantha</i> .....	547
<i>Diospyros pubescens</i> .....	617	<i>cuneifolia</i> .....	547
<i>virginiana</i> .....	616	<i>reptans</i> .....	547
<i>virginiana</i> var. <i>platycarpa</i> .....	617	<i>reptans</i> var. <i>micrantha</i> .....	547
<i>virginiana</i> var. <i>pubescens</i> .....	617	<i>verna</i> .....	547
<i>virginiana</i> f. <i>pumila</i> .....	616	<i>Dracocephalum parviflorum</i> .....	632
<i>Diplachne acuminata</i> .....	470	Dragon Head .....	632
<i>fascicularis</i> .....	470	False .....	632
DIPSACACEAE .....	652	Dropsed Grass .....	467, 468
<i>Dipsacus sylvestris</i> .....	652	<i>Duchesnea indica</i> .....	506
<i>Direa palustris</i> .....	604	Duckweed .....	495
<i>Distichlis stricta</i> .....	461	Ivy-leaved .....	495
Ditch Stonecrop .....	552	Little .....	495
Ditch-grass .....	456	<i>Dulichium arundinaceum</i> .....	492
Dittany .....	635	Dutchman's Breeches .....	546
Dock .....		Pipe .....	525
Bitter .....	525	<i>Dyssodia papposa</i> .....	675
Broad-leaved .....	525		
Curled .....	525		
Great Water .....	525		
Narrow-leaved .....	525		
Pale .....	525		
Patience .....	525		
Prairie .....	667		
Sour .....	526		
Spatter .....	538		
Swamp .....	525		
Dodder .....			
Field .....	624		
Hazel .....	624		
Smartweed .....	624		

## E

EBENACEAE .....	616
<i>Echinacea angustifolia</i> .....	670
<i>pallida</i> .....	670
<i>paradoxa</i> .....	670
<i>purpurea</i> .....	670
<i>Echinochloa colonum</i> .....	478
<i>erus-galli</i> .....	477
<i>erus-galli</i> f. <i>longiseta</i> .....	477
<i>microstachya</i> .....	478
<i>muricata</i> .....	477
<i>muricata</i> var. <i>ludoviciana</i> .....	478

	Page		Page
<i>mericata</i> var. <i>microstachya</i> .....	478	Red .....	522
<i>occidentalis</i> .....	477	Rock .....	522
<i>pungens</i> .....	477	Slippery .....	522
<i>pungens</i> var. <i>ludoviciana</i> .....	478	Water .....	522
<i>pungens</i> var. <i>microstachya</i> .....	478	White .....	522
<i>pungens</i> var. <i>occidentalis</i> .....	477	Winged .....	522
<i>Echinocystis lobata</i> .....	653	<i>Elodea canadensis</i> of auth. ....	457
<i>Echinodorus cordifolius</i> .....	457	<i>Eleusine indica</i> .....	470
<i>cordifolius</i> var. <i>lanceolatus</i> .....	457	<i>Elymus arkansanus</i> .....	463
<i>radicans</i> .....	457	<i>australis</i> .....	464
<i>tenellus</i> .....	457	<i>australis</i> var. <i>glabriflorus</i> .....	464
<i>Echium vulgare</i> .....	629	<i>canadensis</i> .....	463
<i>Eclipta alba</i> .....	669	<i>canadensis</i> f. <i>glaucofolius</i> .....	463
Eel-grass .....	457	<i>glabriflorus</i> .....	464
<i>Eichhornia crassipes</i> .....	497	<i>glaucofolius</i> .....	463
ELAEAGNACEAE .....	604	<i>glaucofolius</i> var. <i>crecendus</i> .....	463
<i>Elaeagnus angustifolia</i> .....	604	<i>glaucofolius</i> var. <i>robustus</i> .....	463
<i>Elatine americana</i> .....	600	<i>glaucus</i> .....	463
ELATINACEAE .....	600	<i>hirsutiglumis</i> .....	463
Elder, Marsh .....	667	<i>jejunus</i> .....	463
Elderberry .....	652	<i>Macounii</i> .....	463
Red .....	652	<i>Mackenzii</i> .....	463
<i>Elecampane</i> .....	666	<i>robustus</i> .....	463
Elephant's foot .....	655	<i>robustus</i> var. <i>vestitus</i> .....	463
<i>Eleocharis acicularis</i> var. <i>gracilis-</i>		<i>striatus</i> .....	463
<i>cens</i> .....	483	<i>striatus</i> var. <i>arkansanus</i> .....	463
<i>acicularis</i> var. <i>typica</i> .....	483	<i>villosus</i> .....	463
<i>acuminata</i> .....	483	<i>villosus</i> f. <i>arkansanus</i> .....	463
<i>calva</i> .....	483	<i>virginicus</i> .....	463
<i>capitata</i> var. <i>verrucosa</i> .....	483	<i>virginicus</i> var. <i>glabriflorus</i> .....	464
<i>compressa</i> .....	483	<i>virginicus</i> var. <i>glabriflorus</i> f. <i>aus-</i>	
<i>Engelmanni</i> .....	483	<i>tralis</i> .....	464
<i>Engelmanni</i> var. <i>robusta</i> .....	483	<i>virginicus</i> f. <i>hirsutiglumis</i> .....	463
<i>lanceolata</i> .....	483	<i>virginicus</i> var. <i>hirsutiglumis</i> ..	463
<i>macrostachya</i> .....	483	<i>virginicus</i> var. <i>jejunus</i> .....	463
<i>mamillata</i> .....	483	<i>virginicus</i> var. <i>submuticus</i> .....	464
<i>obtus</i> .....	482	Empress Tree .....	640
<i>palustris</i> var. <i>glaucescens</i> .....	483	Enchanter's Nightshade .....	608
<i>parvula</i> .....	483	<i>Engelmannia pinnatifida</i> .....	667
<i>quadrangulata</i> .....	482	<i>Epifagus virginiana</i> .....	645
<i>Smallii</i> .....	483	<i>Epilobium densum</i> .....	606
<i>tenuis</i> .....	483	<i>coloratum</i> .....	606
<i>Elephantopus carolinianus</i> .....	655	<i>Epipactis latifolia</i> .....	509
<i>Ellisia Nyctelea</i> .....	626	<i>pubescens</i> .....	510
Elm .....		<i>Eragrostis capillaris</i> .....	460
American .....	522	<i>caroliniana</i> .....	461
Cork .....	522	<i>cilianensis</i> .....	461

	Page		Page
<i>diffusa</i> .....	461	<i>Erythronium albidum</i> .....	502
<i>Frankii</i> .....	460	<i>americanum</i> .....	502
<i>hirsuta</i> .....	461	<i>mesochoreum</i> .....	502
<i>hypnoides</i> .....	460	<i>Eulophus americanus</i> .....	611
<i>intermedia</i> .....	461	<i>Eupatorium altissimum</i> .....	656
<i>lugens</i> .....	461	<i>coelestinum</i> .....	656
<i>major</i> .....	461	<i>cuneifolium</i> var. <i>semiserratum</i> ..	655
<i>megastachya</i> .....	461	<i>falcatum</i> .....	655
<i>minor</i> .....	461	<i>Holsingeri</i> .....	655
<i>pectinacea</i> .....	461	<i>incarnatum</i> .....	656
<i>pectinacea</i> of Am. auth. ....	461	<i>perfoliatum</i> .....	656
<i>pectinacea</i> var. <i>spectabilis</i> ..	461	<i>perfoliatum</i> var. <i>cuneatum</i> ....	656
<i>pilosa</i> .....	461	<i>purpureum</i> .....	655
<i>poaeoides</i> .....	461	<i>semiserratum</i> .....	655
<i>Purshii</i> .....	461	<i>serotinum</i> .....	656
<i>reptans</i> .....	460	<i>sessilifolium</i> .....	656
<i>spectabilis</i> .....	461	<i>urticaefolium</i> .....	656
<i>trichodes</i> .....	461	<i>urticaefolium</i> var. <i>villicaule</i> ....	656
<i>Weigeltiana</i> .....	460	<i>Euphorbia commutata</i> .....	590
<i>Erechtites hieracifolia</i> of auth. in		<i>corollata</i> .....	590
part .....	677	<i>Cyparissias</i> .....	590
<i>hieracifolia</i> var. <i>intermedia</i> ....	677	<i>dentata</i> .....	590
<i>Erianthus alopecuroides</i> .....	478	<i>dictyosperma</i> .....	590
<i>divaricatus</i> .....	478	<i>glyptosperma</i> .....	589
<i>strictus</i> .....	478	<i>heterophylla</i> .....	590
ERICACEAE .....	613	<i>humistrata</i> .....	589
<i>Erigenia bulbosa</i> .....	609	<i>maculata</i> .....	589
<i>Erigeron annuus</i> .....	665	<i>marginata</i> .....	590
<i>canadensis</i> .....	665	<i>nutans</i> .....	589
<i>divaricatus</i> .....	665	<i>obtusata</i> .....	590
<i>philadelphicus</i> .....	665	<i>Preslii</i> .....	589
<i>pulehellus</i> .....	665	<i>serpens</i> .....	589
<i>ramosus</i> .....	665	<i>zygophylloides</i> .....	589
<i>ramosus</i> var. <i>Beyrichii</i> .....	665	EUPHORBACEAE .....	588
<i>tenuis</i> .....	665	<i>Euthamia glutinosa</i> .....	661
<i>Eriochloa contracta</i> .....	472	<i>gymnospermoides</i> .....	661
<i>punctata</i> .....	472	<i>Everlasting</i> .....	666
<i>Eriogonum longifolium</i> .....	525	<i>Pearly</i> .....	666
<i>Erodium cicutarium</i> .....	586	<i>Evolvulus alsinioides</i> .....	623
<i>Eruca nativa</i> .....	548	<i>argenteus</i> .....	623
<i>Erucastrum Pollichii</i> .....	548	<i>Evonymus americanus</i> .....	592
<i>Eryngium prostratum</i> .....	609	<i>atropurpureus</i> .....	592
<i>yuccifolium</i> .....	609	<i>obovatus</i> .....	592
<i>Erysimum arkansanum</i> .....	549		
<i>asperum</i> .....	549		
<i>cheiranthoides</i> .....	549		
<i>repandum</i> .....	549		
		F .....	
		FAGACEAE .....	517
		<i>Fagopyrum esculentum</i> .....	528



	Page		Page
<i>Fagus grandifolia</i> .....	517	<i>laxa</i> .....	484
<i>grandifolia</i> var. <i>caroliniana</i> ....	517	<i>mucronulata</i> .....	484
<i>Falcata comosa</i> .....	584	<i>puberula</i> .....	484
<i>Pitcheri</i> .....	584	<i>Vahlili</i> .....	484
False Aloe .....	506	Finger Grass .....	472
Boneset .....	656	Slender .....	472
Bugbane .....	541	Fire-bush .....	528
Dandelion .....	682	Fireweed .....	677
Dragon Head .....	632	Fire Pink .....	536
Flax .....	548	Fishberry .....	544
Foxglove .....	642	Flag .....	
Garlic .....	501	Blue .....	507
Grape .....	596	Sweet .....	495
Gromwell .....	628	Wild Blue .....	507
Hellebore .....	501	Yellow .....	507
Indigo .....	579	Flame Flower .....	537
Loosestrife .....	606	<i>Flaveria campestris</i> .....	675
Nettle .....	524	Flax .....	548
Pennyroyal .....	630	Fleabane .....	
Pimpernel .....	641	Daisy .....	665
Rue Anemone .....	542	Dwarf .....	665
Scabish .....	675	Marsh .....	665
Sensitive Plant .....	573	<i>Fleur-de-lis</i> \ .....	507
Solomon's-Seal .....	503	Floating Heart .....	619
Spikenard .....	503	Flower-of-an-hour .....	599
Starwort .....	661	Flowering Currant .....	555
Sparkleberry .....	614	Fly Poison .....	500
Fennel .....	611	<i>Foeniculum vulgare</i> .....	611
Dog .....	675, 676	Fog-fruit .....	630
Fescue grass .....	459	<i>Forestiera acuminata</i> .....	618
Fescue, meadow .....	459	Forget-me-not .....	628
<i>Festuca elatior</i> .....	459	Four-o'clock, Wild .....	533
<i>astans</i> .....	459	Foxglove, False .....	642
<i>obtusae</i> .....	459	Yellow False .....	642
<i>octoflora</i> .....	459	Foxtail Grass .....	478
<i>octoflora</i> var. <i>glauca</i> .....	459	Floating .....	466
<i>octoflora</i> var. <i>tenella</i> .....	459	Green .....	478
<i>sciurea</i> .....	459	Meadow .....	466
<i>Shortii</i> .....	459	Prairie .....	478
Figwort .....	639	Yellow .....	478
<i>Fimbristylis autumnalis</i> .....	484	<i>Fragaria chiloensis</i> var. <i>Ananassa</i> .	565
<i>autumnalis</i> of Am. auth. ....	484	<i>grandiflora</i> .....	565
<i>Baldwiniana</i> .....	484	<i>Grayana</i> .....	565
<i>castanea</i> .....	484	<i>vesca</i> var. <i>americana</i> .....	565
<i>castanea</i> var. <i>puberula</i> .....	484	<i>virginiana</i> .....	565
<i>Frankii</i> .....	484	<i>virginiana</i> var. <i>illinoensis</i> .....	565
<i>geminata</i> .....	484	<i>Frasera carolinensis</i> .....	619



	Page		Page
Ghost Flower .....	613	Gramma, Blue .....	471
<i>Gilia linearis</i> .....	626	Hairy .....	471
<i>rubra</i> .....	626	Grape .....	
Gill-over-the-ground .....	632	Bird .....	596
<i>Gillenia stipulata</i> .....	556	False .....	596
Ginger, Wild .....	524	Frost .....	596
Ginseng .....	609	Northern Fox .....	596
<i>Gleditsia aquatica</i> .....	574	Post Oak .....	596
<i>triacanthos</i> .....	574	Raccoon .....	596
<i>triacanthos</i> var. <i>inermis</i> .....	574	Red .....	597
<i>Glyceria acutiflora</i> .....	459	River-bank .....	597
<i>arkansana</i> .....	459	Sand .....	597
<i>aerolata</i> .....	460	Summer .....	596
<i>pallida</i> .....	460	Winter .....	596
<i>septentrionalis</i> .....	459	Grape Hyacinth .....	502
<i>striata</i> .....	460	Grass .....	
<i>Glycyrrhiza lepidota</i> .....	579	Alkali .....	461
<i>Gonolobus laevis</i> .....	622	American Slough .....	470
<i>Gnaphalium obtusifolium</i> .....	666	Awned Wheat .....	463
<i>obtusifolium</i> var. <i>micradenium</i> ..	666	Barnyard .....	470
<i>polyccephalum</i> .....	666	Bayonet .....	485
<i>purpureum</i> .....	666	Bear .....	502
Goat's Beard .....	556, 680	Beard .....	478, 479
Rue .....	578	Old Field .....	479
Golden Alexanders .....	610	Prairie .....	479
Seal .....	543	Silvery .....	479
Goldenrod .....		Woolly .....	478
Blue-stemmed .....	658	Bermuda .....	470
Early .....	659	Blue, Annual .....	460
Flat-topped .....	661	Canada .....	460
Fragrant .....	659	English .....	460
Gray .....	660	Kentucky .....	460
Rough-leaved .....	660	Blue-eyed .....	508
<i>Goodyera pubescens</i> .....	510	Blue-joint .....	465
Goose Grass .....	648	Buffalo .....	471
Gooseberry .....		Bunch, Early .....	464
Prickly .....	555	Bur .....	478
Southern .....	614	Bush .....	468
Wild .....	555	Canary .....	471
Goosefoot .....		Reed .....	471
Maple-leaved .....	529	Catch-fly .....	471
Oak-leaved .....	529	Coco .....	480
Gourd .....		Couch .....	462
Missouri .....	652	Crab .....	472
Wild .....	652	Cut .....	472
GRAMINEAE .....	458	Rice .....	471

	Page		Page
Drospaced .....	467, 468	Smut .....	468
Fall Witch .....	472	Spear, Low .....	460
Fescue, Meadow .....	459	Spike .....	462
Slender .....	459	Squirrel-tail .....	464
Finger .....	472	Switch .....	477
Slender .....	472	Thin .....	466
Fowl Meadow .....	460	Tickle .....	466
Foxtail .....	478	Triple-awned .....	469
Floating .....	466	Tumble .....	470
Green .....	478	Umbrella .....	485
Meadow .....	466	Velvet .....	465
Prairie .....	478	Vernal, Sweet .....	471
Yellow .....	478	White .....	472
French .....	577	Whitlow .....	547
Goose .....	470	Wild Oat .....	465
Hair .....	466, 467	Windmill .....	471
Crested .....	464	Witch .....	477
Hungarian Brome .....	458	Fall .....	472
Indian .....	480	Wood Reed .....	466
Johnson .....	480	Yard .....	470
Love .....	460	Grass Pink .....	509
Creeping .....	460	Grass of Parnassus .....	554
Indian .....	461	<i>Gratiola anagallidea</i> .....	641
Purple .....	461	<i>dubia</i> .....	641
Manna .....		<i>lutea</i> .....	641
Floating .....	460	<i>neglecta</i> .....	641
Pale .....	460	<i>sphaerocarpa</i> .....	641
Melic .....	462	<i>virginiana</i> .....	641
Mesquite .....	471	<i>virginiana</i> of auth. ....	641
Hairy .....	471	Greek Valerian .....	626
Oat .....	465	Green Dragon .....	495
Orchard .....	462	Green-brier .....	506
Porecupine .....	469	Bristly .....	506
Poverty .....	469	<i>Grindelia lanceolata</i> .....	658
Prairie Cup .....	472	<i>lanceolata</i> f. <i>latifolia</i> .....	658
Quack .....	462	<i>squarrosa</i> .....	657
Quitch .....	462	<i>squarrosa</i> var. <i>nuda</i> .....	657
Reed, Long-leaved .....	465	<i>squarrosa</i> var. <i>serrulata</i> .....	657
Rib .....	647	Gromwell .....	
Rye .....		Corn .....	628
Italian .....	464	False .....	628
Perennial .....	464	<i>Grossularia missouriensis</i> .....	555
Salt .....	461	Ground .....	
Sand .....	462	Cherry .....	637
Satin .....	467	Honeysuckle .....	576
Scratch .....	467	Ivy .....	632
Slough .....	471	Plum .....	578

	Page		Page
Groundnut .....	583	<i>Hedysarum frutescens</i> .....	582
Gum .....		<i>Helenium altissimum</i> .....	675
Black .....	613	autumnale .....	675
Sweet .....	555	campestre .....	675
Gum Plant .....	657	latifolium .....	675
Gum-elastic .....	616	nudiflorum .....	675
Gutierrezia dracunculoides .....	658	polyphyllum .....	675
Gymnocladus dioica .....	573	tenuifolium .....	675
Gymnopogon ambiguus .....	471	<i>Heleochloa schoenoides</i> .....	469
H		<i>Helianthemum Bicknellii</i> .....	601
		canadense .....	601
<i>Habenaria ciliaris</i> .....	509	majus .....	601
clavellata .....	509	<i>Helianthus angustifolius</i> .....	671
flava var. <i>virescens</i> .....	509	annuus .....	670
lacera .....	509	atrorubens var. <i>pubescens</i> .....	671
leucophaea .....	509	decapetalus .....	672
peramoena .....	509	divaricatus .....	671
Hackberry .....	522	doronicoides .....	670
Dwarf .....	523	formosus .....	671
Southern .....	522	grosseserratus .....	671
Hair Grass .....	466, 467	hirsutus .....	672
HALORAGIDACEAE .....	608	hirsutus var. <i>leoninus</i> .....	672
HAMAMELIDACEAE .....	555	hirsutus var. <i>trachyphyllus</i> .....	672
<i>Hamamelis vernalis</i> .....	555	instabilis .....	672
vernalis f. <i>carnea</i> .....	555	laetiflorus .....	671
vernalis f. <i>tomentella</i> .....	555	lenticularis .....	671
virginiana .....	555	leoninus .....	672
Harbinger-of-spring .....	609	leptocaulis .....	672
Hardhack .....	556	Maximiliani .....	671
Harebell .....	653	microcephalus .....	671
<i>Hartmannia speciosa</i> .....	607	mollis .....	671
Haw .....		mollissimus .....	672
Black .....	651	occidentalis .....	671
Green .....	560	orgyalis .....	671
Paraley .....	564	petiolaris .....	670
Possum .....	591	rigidus .....	671
Summer .....	563	salicifolius .....	671
Hawk's Beard .....	681	scaberrimus .....	671
Hawkweed .....	682	strumosus .....	672
Hazelnut .....	516	subcanescens .....	672
Beaked .....	516	tracheliiifolius .....	672
Heal-all .....	632	tuberosus .....	672
<i>Hedeoma acinioides</i> .....	634	tuberosus var. <i>subcanescens</i> .....	672
hispidula .....	634	viridis .....	672
pulegioides .....	634	<i>Heliopsis helianthoides</i> .....	669
Hedge Nettle .....	632	scabra .....	669
		<i>Heliotrope, Indian</i> .....	627

	Page		Page
<i>Heliotropium indicum</i> .....	627	Shag-bark .....	514
<i>tenellum</i> .....	627	Shell-bark .....	514
Hellebore, False .....	501	Swamp .....	514
Helleborine .....	509	White .....	515
<i>Hemerocallis fulva</i> .....	502	<i>Hicoria cordiformis</i> .....	514
<i>Hemicarpha micrantha</i> .....	485	<i>glabra</i> .....	514
<i>micrantha</i> var. <i>aristulata</i> .....	485	<i>microcarpa</i> .....	514
Hemlock Chervil .....	612	<i>ovata</i> .....	514
Parsley .....	612	<i>Pecan</i> .....	514
Hemp .....	523	<i>villosa</i> .....	514
Indian .....	620	<i>Hieracium Greenii</i> .....	682
Water .....	532, 533	<i>Gronovii</i> .....	682
Hemp-weed, Climbing .....	656	<i>Gronovii</i> var. <i>foliosum</i> .....	682
Henbit .....	632	<i>longipilum</i> .....	682
<i>Hepatica</i> .....	541	<i>scabrum</i> .....	682
<i>acutiloba</i> .....	541	<i>Traillii</i> .....	682
<i>acutiloba</i> f. <i>albiflora</i> .....	541	<i>venosum</i> .....	682
<i>acutiloba</i> f. <i>rosea</i> .....	541	HIPPOCASTANACEAE .....	594
<i>americana</i> .....	541	Hoary Alyssum .....	547
<i>americana</i> f. <i>candida</i> .....	541	Hoffmanseggia <i>Jamesii</i> .....	574
<i>Hepatica</i> .....	541	Hog Peanut .....	584
<i>triloba</i> of Am. auth. ....	541	Hogwort .....	588
<i>Heracleum lanatum</i> .....	612	<i>Holcus lanatus</i> .....	465
Hercules' Club .....	608	Hollyhock .....	598
<i>Heteranthera dubia</i> .....	498	Honewort .....	610
<i>limosa</i> .....	497	Honeysuckle .....	
<i>reniformis</i> .....	498	Grape .....	650
<i>Heterotheca subaxillaris</i> .....	658	Ground .....	576
<i>Heuchera americana</i> .....	553	Japanese .....	650
<i>hirsuticaulis</i> .....	554	Trumpet .....	650
<i>hispidula</i> of auth. ....	554	Wild .....	613
<i>macrorrhiza</i> .....	554	Yellow .....	650
<i>parviflora</i> of auth. ....	554	Hop .....	523
<i>puberula</i> .....	554	Japanese .....	523
<i>Richardsonii</i> var. <i>Grayana</i> .....	554	Hop Hornbeam .....	516
<i>villosa</i> .....	554	Tree .....	587
<i>Hexalectris aphylla</i> .....	511	<i>Hordeum jubatum</i> .....	464
<i>spicata</i> .....	511	<i>nodosum</i> .....	464
<i>Hibiscus incanus</i> .....	599	<i>pusillum</i> .....	464
<i>lasiocarpus</i> .....	599	<i>sativum</i> .....	480
<i>militaris</i> .....	599	<i>vulgare</i> var. <i>trifurcatum</i> .....	464
<i>syriacus</i> .....	599	Horehound .....	631
<i>Trionum</i> .....	599	Water .....	635
Hickory .....		Hornwort .....	538
Big Shell-bark .....	514	Horse Balm .....	636
Bitternut .....	514	Gentian .....	650
Pignut .....	514	Mint .....	634





	Page		Page
Pipe .....	613	Jerusalem Artichoke .....	672
Plantain .....	677	Jimson Weed .....	638
Strawberry .....	566	Johnny Jump-up .....	603
Tobacco .....	654	Johnson Grass .....	490
Turnip .....	495	Jointweed .....	528
Indigo .....		Juba's Bush .....	533
Blue False .....	575	JUGLANDACEAE .....	514
False .....	579	<i>Juglans cinerea</i> .....	514
White Wild .....	575	<i>nigra</i> .....	514
Innocence .....	649	JUNCACEAE .....	498
Inula Helenium .....	666	<i>Juncus acuminatus</i> .....	499
Iodanthus pinnatifidus .....	551	<i>alpinus</i> var. <i>fuscescens</i> .....	499
Ipecac, American .....	556	<i>aristulatus</i> .....	499, 500
Ipomoea coccinea .....	623	<i>balticus</i> var. <i>littoralis</i> .....	498
<i>hederacea</i> .....	623	<i>biflorus</i> .....	500
<i>lacunosa</i> .....	623	<i>biflorus</i> f. <i>adinus</i> .....	500
<i>pandurata</i> .....	623	<i>brachycarpus</i> .....	499
<i>pandurata</i> var. <i>rubescens</i> .....	623	<i>bufonius</i> .....	498
<i>purpurea</i> .....	623	<i>canadensis</i> .....	499
<i>Quamoclit</i> .....	623	<i>canadensis</i> var. <i>subcaudatus</i> .....	499
Iresine paniculata .....	533	<i>dichotomus</i> .....	498
IRIDACEAE .....	507	<i>diffusissimus</i> .....	499
<i>Iris caroliniana</i> .....	507	<i>Dudleyi</i> .....	498
<i>eristata</i> .....	507	<i>effusus</i> var. <i>solutus</i> .....	498
Dwarf Wild .....	507	<i>interior</i> .....	498
<i>foliosa</i> .....	507	<i>kansanus</i> .....	498
<i>fulva</i> .....	507	<i>macer</i> .....	498
<i>pallida</i> .....	507	<i>macer</i> var. <i>anthelatus</i> .....	498
<i>pseudacorus</i> .....	507	<i>marginatus</i> .....	499
<i>pumila</i> .....	507	<i>marginatus</i> var. <i>setosus</i> .....	500
<i>Shrevei</i> .....	507	<i>monostichus</i> .....	498
<i>versicolor</i> of auth. in part .....	507	<i>nodatus</i> .....	499
<i>virginica</i> .....	507	<i>nodosus</i> .....	499
Ironweed .....	634	<i>polyccephalus</i> .....	499
Ironwood .....	517	<i>polyccephalus</i> of auth. .....	499
Isanthus brachiatus .....	630	<i>robustus</i> .....	499
Isopyrum biternatum .....	542	<i>scirpoides</i> .....	499
Isotria affinis .....	509	<i>secundus</i> .....	498
Itea virginica .....	554	<i>subcaudatus</i> .....	499
Iva ciliata .....	667	<i>tenuis</i> .....	498
<i>xanthifolia</i> .....	667	<i>tenuis</i> of auth. .....	498
Ivy, Ground .....	632	<i>tenuis</i> var. <i>anthelatus</i> .....	498
Kenilworth .....	639	<i>Torreyi</i> .....	499
		<i>validus</i> .....	499
J .....		Juneberry .....	557
Jack-in-the-pulpit .....	495	<i>Juniperus Ashei</i> .....	454
Jacob's Ladder .....	626	<i>mexicana</i> .....	454

	Page
<i>subinoides</i> .....	454
<i>virginiana</i> .....	454
<i>virginiana</i> var. <i>crebra</i> .....	454
<i>Jussiaea decurrens</i> .....	605
<i>diffusa</i> .....	605

## K

<i>Kallstroemia intermedia</i> .....	587
<i>maxima</i> .....	587
Kenilworth Ivy .....	639
Kentucky Blue Grass .....	460
Coffee-tree .....	573
<i>Kickxia Elatine</i> .....	639
Kingnut .....	514
Kinnikinnik .....	613
<i>Kneiffia linearis</i> .....	607
<i>pratensis</i> .....	607
Knot-grass .....	526
Knot-weed .....	526
Japanese .....	528
<i>Kochia prostrata</i> .....	529
<i>scoparia</i> .....	529
<i>trichophylla</i> .....	528
<i>Koeleria cristata</i> .....	464
<i>Krigia amplexicaulis</i> .....	680
<i>biflora</i> .....	680
Dandelion .....	680
<i>occidentalis</i> .....	680
<i>virginica</i> .....	680
<i>Kuhnia eupatorioides</i> .....	656
<i>eupatorioides</i> var. <i>angustifolia</i> ..	656
<i>eupatorioides</i> var. <i>corymbulosa</i> ..	656
<i>Kyllingia pumila</i> .....	482

## L

LABIATAE .....	630
<i>Laciniaria angustifolia</i> .....	657
<i>Lactuca canadensis</i> of auth. in part	681
<i>canadensis</i> var. <i>integrifolia</i> ....	681
<i>canadensis</i> var. <i>integrifolia</i> f. <i>an-</i>	
<i>gustata</i> .....	681
<i>canadensis</i> var. <i>latifolia</i> .....	681
<i>canadensis</i> var. <i>latifolia</i> f. <i>exau-</i>	
<i>riulata</i> .....	681
<i>canadensis</i> var. <i>montana</i> .....	681
<i>canadensis</i> var. <i>obovata</i> .....	681

<i>canadensis</i> var. <i>obovata</i> f. <i>steno-</i>	
<i>poda</i> .....	681
<i>canadensis</i> var. <i>typica</i> .....	681
<i>floridana</i> .....	682
<i>graminifolia</i> .....	682
<i>hirsuta</i> .....	681
<i>integrifolia</i> of auth. ....	681
<i>ludoviciana</i> .....	681
<i>pulchella</i> .....	682
<i>sagittifolia</i> .....	681
<i>saligna</i> .....	681
<i>scariola</i> .....	681
<i>scariola</i> var. <i>integrata</i> .....	681
<i>villosa</i> .....	682
Ladies' Ear-drops .....	528
Tobacco .....	665
Tresses .....	509
Little .....	509
Nodding .....	510
Slender .....	509
Lady's Slipper .....	
Large Yellow .....	508
Showy .....	508
Small White .....	508
Yellow .....	508
Sorrel .....	585
Lady's Thumb .....	527
<i>Lagenaria vulgaris</i> .....	653
Lamb's Quarter .....	529
<i>Lamium amplexicaule</i> .....	632
<i>purpureum</i> .....	632
<i>Laportea canadensis</i> .....	524
<i>Lappula echinata</i> .....	628
<i>Redowskii</i> var. <i>occidentalis</i> ....	627
<i>virginiana</i> .....	627
Larkspur .....	543
Dwarf .....	543
Glade .....	543
Prairie .....	543
<i>Lathyrus palustris</i> .....	583
<i>palustris</i> var. <i>myrtifolius</i> .....	583
<i>pusillus</i> .....	583
<i>venosus</i> var. <i>intonsus</i> .....	583
LAURACEAE .....	545
<i>Lavauzia triloba</i> .....	607
Lead Plant .....	579
Leaf-cup .....	666

	Page		Page
Leather Flower .....	542	capitata var. sericea .....	582
Swamp .....	542	<i>frutescens</i> .....	582
Leatherwood .....	604	<i>hirta</i> .....	582
Leavenworthia uniflora .....	551	intermedia .....	582
Lechea major .....	601	Manniana .....	581
tenuifolia .....	601	Nuttallii .....	582
villosa .....	600	procumbens .....	581
Leek, Wild .....	501	repens .....	581
Leersia lenticularis .....	471	simulata .....	582
oryzoides .....	471	stipulacea .....	582
virginica .....	472	striata .....	582
LEGUMINOSAE .....	573	Stuevei .....	581
Leitneria floridana .....	513	Stuevei var. angustifolia .....	581
LEITNERIACEAE .....	513	Stuevei var. neglecta .....	581
Lemna cyclostasa .....	495	violacea .....	581
minor .....	495	violacea var. prairea .....	581
perpusilla .....	495	virginica .....	582
perpusilla var. trinervis .....	495	Lesquerella angustifolia .....	547
trisulea .....	495	gracilis .....	547
valdiviana .....	495	Lettuce, Prickly Wild .....	681
LEMNACEAE .....	495	Leucospora multifida .....	641
Lemon Balm .....	634	Levisticum officinale .....	612
Lemotris hyacinthina .....	502	Liatrix acidota .....	657
LENTIBULARIACEAE .....	644	aspera .....	657
Leontodon erythrospermum .....	680	cylindracea .....	657
Taraxacum .....	680	glabrata .....	657
Leonurus Cardiaea .....	632	hirsuta .....	656
Lepachys columnaris .....	670	punctata of auth. ....	657
columnaris var. pulcherrima ....	670	pycnostachya .....	657
pinnata .....	670	scariosa .....	657
Lepidium apetalum .....	548	sphaeroidea .....	657
campestre .....	548	spicata .....	657
densiflorum .....	548	squarrosa .....	656
Draba .....	548	squarrosa var. intermedia .....	657
neglectum .....	548	Licorice, Wild .....	648
perfoliatum .....	548	Ligusticum canadense .....	611
tezanum .....	548	LILIACEAE .....	500
virginicum .....	548	Lilium michiganense .....	502
Leptandra virginica .....	641	superbum .....	502
Leptochloa attenuata .....	470	tigrinum .....	502
fascicularis .....	470	Lily .....	
filiformis .....	470	Blackberry .....	507
mucronata .....	470	Day .....	502
Leptoloma cognatum .....	472	Glade .....	607
Lespedeza acuticarpa .....	582	Tiger .....	502
capitata .....	582	Turk's-cap .....	502
capitata var. longifolia .....	582		

	Page		Page
<i>Limnium Spongia</i> .....	458	Locust	
<i>Limnium aquatica</i> of auth. ....	642	Black .....	578
<i>aquatica</i> var. <i>tenuifolia</i> of auth. ....	642	Honey .....	574
<i>subulata</i> .....	642	Water .....	574
<i>tenuifolia</i> .....	642	LOGANIACEAE .....	618
LINACEAE .....	586	<i>Lolium multiflorum</i> .....	464
<i>Linaria canadensis</i> var. <i>texana</i> ....	639	<i>perenne</i> .....	464
<i>Cymbalaria</i> .....	639	<i>temulentum</i> .....	464
<i>Elatine</i> .....	639	<i>Lomatium daucifolium</i> .....	611
<i>spuria</i> .....	639	<i>Lonicera dioica</i> var. <i>glaucescens</i> ...	650
<i>vulgaris</i> .....	639	<i>flava</i> .....	650
Linden .....	597	<i>flavida</i> .....	650
Linn .....	597	<i>glaucescens</i> .....	650
Linseed .....	586	<i>japonica</i> .....	650
<i>Linum medium</i> .....	586	<i>prolifera</i> .....	650
<i>rigidum</i> .....	586	<i>sempervirens</i> .....	650
<i>striatum</i> .....	586	<i>Sullivantii</i> .....	650
<i>sulcatum</i> .....	586	Loosestrife	
<i>usitatissimum</i> .....	586	False .....	606
<i>Liparis liliifolia</i> .....	510	Purple .....	605
<i>Lippia lanceolata</i> .....	630	Tufted .....	615
<i>lanceolata</i> var. <i>recognita</i> .....	630	Whorled .....	616
<i>nodiflora</i> .....	630	Winged .....	605
<i>Liquidambar styraciflua</i> .....	555	<i>Lophotocarpus calycinus</i> .....	457
<i>Liquorice</i> , Wild .....	579	Lopseed .....	646
<i>Liriodendron tulipifera</i> .....	544	LORANTHACEAE .....	524
<i>Lithospermum angustifolium</i> ....	628	<i>Lotus americanus</i> .....	576
<i>arvense</i> .....	628	<i>corniculatus</i> .....	576
<i>canescens</i> .....	628	<i>Oriental</i> .....	539
<i>carolinense</i> .....	628	<i>Yellow</i> .....	538
<i>Gmelini</i> .....	628	Lousewort .....	644
<i>latifolium</i> .....	628	Lovage .....	612
Live-forever .....	553	Love Grass .....	460
Liver-leaf .....	541	<i>Creeping</i> .....	460
Lizard's-tail .....	511	<i>Indian</i> .....	461
LOASACEAE .....	604	<i>Purple</i> .....	461
<i>Lobelia cardinalis</i> .....	653	Love-vine .....	624
<i>inflata</i> .....	654	<i>Ludvigia alternifolia</i> .....	606
<i>leptostachys</i> .....	654	<i>glandulosa</i> .....	606
<i>puberula</i> .....	653	<i>natans</i> var. <i>typica</i> .....	606
<i>siphilitica</i> .....	653	<i>palustris</i> of auth. ....	606
<i>spicata</i> .....	654	<i>palustris</i> var. <i>americana</i> .....	606
<i>spicata</i> var. <i>hirtella</i> .....	654	<i>polycarpa</i> .....	606
<i>Lobelia</i> , Blue .....	653	<i>Luzula campestris</i> var. <i>bulbosa</i> ...	500
LOBELIACEAE .....	653	<i>Lychnis alba</i> .....	536
Loco Weed .....	578	<i>dioica</i> .....	536





	Page		Page
Melic Grass .....	462	Dotted .....	472
Melica mutica .....	462	Hungarian .....	478
nitens .....	462	Italian .....	478
Porteri .....	462	Mimulus alatus .....	640
Melilotus alba .....	576	glabratus var. Fremontii .....	640
officinalis .....	576	ringens .....	640
Melissa officinalis .....	634	Mint .....	
Melothria pendula .....	653	Bergamot .....	636
MENISPERMACEAE .....	544	Corn .....	636
Menispermum canadense .....	544	Field .....	636
Mentha alopecuroides .....	635	Horse .....	634
arvensis .....	636	Ohio .....	634
arvensis var. canadensis .....	636	Mountain .....	634
arvensis var. glabrata .....	636	Wood .....	634
Cardiaca .....	635	Woolly .....	635
citrata .....	636	Missouri Gourd .....	652
gentilis .....	636	Mist-flower .....	656
longifolia .....	635	Mistletoe .....	524
piperita .....	636	Mitchella repens .....	648
spicata .....	636	Mitella diphylla .....	554
sylvestris .....	635	Miterwort .....	554
Mentzelia oligosperma .....	604	Mock Bishop's-weed .....	610
Mercurialis annua .....	588	Mocker Nut .....	515
Mercury .....	588	Mollugo verticillata .....	534
Three-seeded .....	588	Monarda Bradburiana .....	634
Merioliz serrulata .....	607	citriodora .....	634
Mertensia virginica .....	628	didyma .....	633
Mesquite Grass .....	471	dispersa .....	634
Mesquite, vine .....	477	fistulosa .....	633
Mexican Tea .....	529	fistulosa var. mollis .....	633
Miami Mist .....	626	mollis .....	633
Micranthes pennsylvanica .....	553	pectinata .....	633
tezana .....	553	punctata .....	634
virginensis .....	553	punctata var. occidentalis .....	634
Microstylis unifolia .....	510	punctata subsp. occidentalis .....	634
Mikania scandens .....	656	punctata var. villicaulis .....	634
Milkweed .....		Moneywort .....	615
Climbing .....	623	Monkey Flower .....	640
Green .....	622	Monolepis Nuttalliana .....	531
Purple .....	621	Monotropa Hypopitys .....	613
Swamp .....	621	uniflora .....	613
Whorled .....	622	Moonseed .....	544
Milkwort .....		MORACEAE .....	523
Field .....	587	Morning Glory .....	
Pink .....	587	Blue .....	623
Millet .....		Common .....	623
Broom-corn .....	477	Dwarf .....	623



	Page		Page
Nightshade		White	517
Black	636	Willow	519
Climbing	636	Yellow	518, 519
Nimble Will	467	Oakesia sessilifolia	501
Ninebark	556	Oats	465
Nipple Cactus	604	Wild	465, 501
Nodding Wild Onion	501	Yellow False	465
Notholcus lanatus	465	Obedient Plant	632
Nothoscordum bivalve	501	Oenothera biennis	607
Nut-grass		fruticosa	607
Tall	486	fruticosa var. hirsuta	607
Yellow	481	hybrida	607
NYCTAGINACEAE	533	laciniata	606
Nymphaea advena	538	laciniata var. grandiflora	606
odorata	538	linearis	607
osarkana	538	linifolia	606
tuberosa	538	missouriensis	607
NYMPHAEACEAE	538	muricata	606
Nymphoides peltatum	619	muricata var. canescens	606
Nymphozanthus advena	538	parviflora	606
osarkanus	538	pratensis	607
Nympha aquatica	613	rhombipetala	606
sylvatica	613	serrulata	607
		speciosa	607
O		strigosa	607
Oak		triloba	607
Basket	518	Old Man's Beard	618
Black	520	Oldenlandia uniflora	650
Black Jack	519	OLEACEAE	617
Bur	518	ONAGRACEAE	605
Chinquapin	518	Onion	
Cow	518	Nodding Wild	501
Jack	519	Wild	501
Jerusalem	529	Onopordum Acanthium	679
Overcup	517	Onosmodium hispidissimum	628
Pin	519	hispidissimum var. macro-	
Post	517	spermum	628
Red	519	occidentale	628
Scarlet	519	occidentale var. sylvestre	628
Serub	518	subsetosum	628
Shin	518	Opuntia macrorhiza	604
Shingle	520	Rafinesquii	604
Southern Red	518	Orchard Grass	462
Spanish	518	ORCHIDACEAE	508
Swamp White	518	Orehis	
Turkey	519	Green Wood	509
Water	519	Nodding Log	509



	Page		Page
lanuginosum var. <i>Lindheimeri</i> ..	474	Parsley	
lanuginosum var. <i>septentrionale</i> .	474	Hemlock .....	612
latifolium .....	476	Prairie .....	611
Leibergii .....	476	Parsnip .....	611
<i>Lindheimeri</i> .....	474	Cow .....	612
<i>Lindheimeri</i> var. <i>fasciculatum</i> ..	474	Meadow .....	610
<i>Lindheimeri</i> var. <i>implicatum</i> ...	475	<i>Parthenium hispidum</i> .....	667
<i>Lindheimeri</i> var. <i>septentrionale</i> .	474	<i>Hysterophorus</i> .....	667
linearifolium .....	473	<i>integrifolium</i> .....	667
linearifolium var. <i>Wernerii</i> .....	473	<i>repens</i> .....	667
malacophyllum .....	475	<i>Parthenocissus quinquefolia</i> .....	595
microcarpon .....	474	<i>quinquefolia</i> var. <i>hirsuta</i> .....	595
miliaceum .....	477	<i>quinquefolia</i> var. <i>Saint-Paulii</i> ..	596
nitidum .....	474	<i>vitacea</i> .....	596
obtusum .....	477	Partridge Berry .....	648
oligosanthes var. <i>Helleri</i> .....	475	<i>Paspalum Bushii</i> .....	473
oligosanthes var. <i>Scribnerianum</i> .	475	<i>ciliatifolium</i> .....	472
perlongum .....	473	<i>ciliatifolium</i> var. <i>Muhlenbergii</i> ..	473
philadelphicum .....	476	<i>ciliatifolium</i> var. <i>stramineum</i> ..	473
polyanthes .....	475	<i>circularis</i> .....	473
<i>Porterianum</i> .....	476	<i>dissectum</i> .....	472
<i>praecoxius</i> .....	475	<i>floridanum</i> .....	473
<i>pubifolium</i> .....	476	<i>laeve</i> var. <i>circularis</i> .....	473
<i>Ravenolii</i> .....	475	<i>laeve</i> var. <i>pilosum</i> .....	473
<i>scoparium</i> .....	476	<i>laevigatum</i> .....	473
<i>Scribnerianum</i> .....	475	<i>mucronatum</i> .....	472
sphaerocarpon .....	475	<i>Muhlenbergii</i> .....	473
sphaerocarpon var. <i>inflatum</i> ....	475	<i>plenipilum</i> .....	473
spretum .....	474	<i>praelongum</i> .....	473
stipitatum .....	477	<i>pubescens</i> .....	473
subvillosum .....	475	<i>pubiflorum</i> var. <i>glabrum</i> .....	473
<i>tennesseensis</i> .....	474	<i>repens</i> .....	472
villosissimum .....	475	<i>stramineum</i> .....	473
virgatum .....	477	<i>Passiflora incarnata</i> .....	604
<i>Wernerii</i> .....	473	<i>lutea</i> .....	604
<i>xalapense</i> .....	474	PASSIFLORACEAE .....	604
<i>Papaver dubium</i> .....	546	Passion Flower .....	604
<i>Rhoeas</i> .....	546	<i>Pastinaca sativa</i> .....	611
<i>somniferum</i> .....	546	<i>Paulownia tomentosa</i> .....	640
PAPAVERACEAE .....	545	Pea	
Papaw .....	544	Butterfly .....	584
<i>Parietaria obtusa</i> .....	524	Cow .....	584
<i>pennsylvanica</i> .....	524	Hoary .....	578
<i>Parnassia grandifolia</i> .....	554	Marsh .....	583
<i>Parosela Dalea</i> .....	577	Milk .....	584
<i>enneandra</i> .....	577	Partridge .....	574
<i>leporina</i> var. <i>alba</i> .....	577	Scurfy .....	577

	Page		Page
Sensitive .....	575	Phacelia bipinnatifida .....	626
Turkey .....	584	dubia .....	627
Peanut, Hog .....	584	hirsuta .....	627
Pear .....	556	Purshii .....	626
Pearlwort .....	534	Phalaris arundinacea .....	471
Pearly Everlasting .....	666	canariensis .....	471
Pecan .....	514	caroliniana .....	471
Bitter .....	514	Phaseolus polystachyus .....	584
PEDALIACEAE .....	645	<i>Philotria canadensis</i> .....	457
Pedicularis canadensis .....	644	Phleum pratense .....	466
lanceolata .....	644	Phlox amplifolia .....	625
Pellitory .....	524	bifida .....	625
Peltandra virginica .....	495	Blue .....	625
virginica f. hastifolia .....	495	divaricata var. Laphamii .....	625
Pennyroyal .....	634	Drummondii .....	626
False .....	630	glaberrima var. interior .....	625
Penthorum sedoides .....	552	glaberrima var. melampyrifolia .....	625
Pentstemon arkansanus .....	640	maculata var. odorata .....	625
arkansanus var. pubescens .....	640	paniculata .....	625
calycosus .....	640	pilosa var. fulgida .....	625
canescens of auth. ....	639	pilosa var. fulgida f. albiflora .....	625
Cobaea var. purpureus .....	640	pilosa var. ozarkana .....	625
Digitalis .....	640	pilosa var. virens .....	625
grandiflorus .....	640	stellata .....	625
laevigatus var. <i>Digitalis</i> .....	640	Phoradendron flavescens .....	524
pallidus .....	639	Phragmites communis of Am. auth. ....	462
tubiflorus .....	640	communis var. Berlandieri .....	462
Peplis diandra .....	604	Phryma Leptostachya .....	646
Pepper-root .....	551	PHRYMACEAE .....	646
Pepper-vine .....	596	Phyllanthus caroliniensis .....	589
Peppergrass .....	548	Physalis angulata .....	637
Peppermint .....	636	barbadensis .....	637
<i>Peramium pubescens</i> .....	510	barbadensis var. obscura .....	637
Perilla frutescens .....	636	heterophylla .....	637
Periwinkle .....	621	heterophylla var. ambigua .....	637
<i>Persicaria amphibia</i> .....	527	heterophylla var. nyctaginea .....	637
<i>Hydropiper</i> .....	527	ixocarpa .....	637
<i>Muhlenbergii</i> .....	527	Lagascacae .....	637
<i>opelousana</i> .....	528	lanceolata .....	638
<i>punctata</i> .....	527	longifolia .....	638
Persimmon .....	616	missouriensis .....	637
Petalostemum candidum .....	578	pendula .....	637
multiflorum .....	577	peruviana .....	638
purpureum .....	577	pruinosa .....	637
purpureum var. pubescens .....	577	pubescens .....	637
Petunia, Wild .....	646	pumila .....	638



	Page		Page
subglabrata .....	638	Strobilus .....	454
virginiana .....	638	sylvestris .....	454
<i>Physalodes physalodes</i> .....	638	virginiana .....	454
<i>Physocarpus opulifolius</i> var. inter-		Pinweed .....	601
medius .....	556	Pipe Vine .....	525
<i>Physostegia formosior</i> .....	632	PIPERACEAE .....	511
intermedia .....	632	Planer Tree .....	522
virginiana .....	632	<i>Planera aquatica</i> .....	522
<i>Phytolacca americana</i> .....	533	<i>Plantago aristata</i> .....	647
<i>decandra</i> .....	533	<i>cordata</i> .....	647
PHYTOLACCACEAE .....	533	<i>elongata</i> .....	647
Pickereel-weed .....	497	<i>heterophylla</i> .....	647
<i>Pieris Sprengeriana</i> .....	680	<i>lanceolata</i> .....	647
Pigeon Berry .....	613	<i>major</i> .....	647
Pig-weed .....	529, 532	<i>media</i> .....	647
Spreading .....	532	<i>Purshii</i> .....	647
Winged .....	528	<i>pusilla</i> .....	647
<i>Pilea pumila</i> .....	524	<i>rhodosperma</i> .....	647
Pimpernel .....		<i>Rugelii</i> .....	647
False .....	641	<i>spinulosa</i> .....	647
Scarlet .....	616	<i>virginica</i> .....	647
Water .....	615	PLANTAGINACEAE .....	647
Yellow .....	611	Plantain .....	647
PINACEAE .....	454	Downy Rattlesnake .....	510
Pine .....		Indian .....	677
Austrian .....	454	Mud .....	498
Scotch .....	454	Robin's .....	665
Scrub .....	454	Water .....	457
Southern Yellow .....	453	PLATANACEAE .....	555
White .....	454	<i>Platanus occidentalis</i> .....	555
Pine-weed .....	600	<i>occidentalis</i> f. <i>attenuata</i> .....	555
Pineapple Weed .....	676	<i>occidentalis</i> var. <i>glabrata</i> .....	555
Pinesap .....	613	<i>Pluchea foetida</i> .....	665
Pink .....		<i>petiolata</i> .....	665
Deptford .....	536	Plum .....	
Fire .....	536	Big Tree .....	573
Grass .....	509	Chickasaw .....	572
Indian .....	536	Ground .....	578
Maiden .....	536	Wild .....	573
Prairie .....	618	Wild Goose .....	572
Rock .....	537	<i>Poa annua</i> .....	460
Rose .....	618	<i>Chapmanniana</i> .....	460
Pink Needle .....	586	<i>compressa</i> .....	460
Pink-root .....	618	<i>nemoralis</i> .....	460
<i>Pinus echinata</i> .....	453	<i>palustris</i> .....	460
<i>nigra</i> .....	454	<i>pratensis</i> .....	460

	Page		Page
<i>silvestris</i> .....	460	<i>coccineum</i> var. <i>pratensis</i> .....	527
<i>triflora</i> .....	460	<i>Convolvulus</i> .....	528
<i>Wolffi</i> .....	460	<i>euspidatum</i> .....	528
<i>Podophyllum peltatum</i> .....	544	<i>densiflorum</i> .....	526
Poet's <i>Narcissus</i> .....	506	<i>erectum</i> .....	526
<i>Pogonia affinis</i> .....	509	<i>exsertum</i> .....	526
<i>trianthophora</i> .....	509	<i>Hydropiper</i> of auth. ....	527
Poison Hemlock .....	610	<i>Hydropiper</i> var. <i>projectum</i> ....	527
<i>Ivy</i> .....	591	<i>hydropiperoides</i> .....	527
<i>Oak</i> .....	591	<i>hydropiperoides</i> f. <i>strigosum</i> ....	528
<i>Pokeberry</i> .....	533	<i>hydropiperoides</i> var. <i>strigosum</i> ..	528
<i>Pokeweed</i> .....	533	<i>lapathifolium</i> .....	526
<i>Polanisia graveolens</i> .....	552	<i>lapathifolium</i> var. <i>nodosum</i> ....	526
<i>trachysperma</i> .....	552	<i>littorale</i> of auth. ....	526
Pole-cat Bush .....	591	<i>longistylum</i> .....	527
POLEMONIACEAE .....	625	<i>Muhlenbergii</i> .....	527
<i>Polemonium reptans</i> .....	626	<i>natans</i> .....	527
<i>Polycodium interius</i> .....	614	<i>neglectum</i> .....	526
<i>neglectum</i> .....	614	<i>opelousanum</i> .....	528
<i>Polygala incarnata</i> .....	587	<i>orientale</i> .....	527
<i>sanguinea</i> .....	587	<i>pensylvanicum</i> .....	527
<i>Senega</i> .....	587	<i>pensylvanicum</i> var. <i>laevigatum</i> ..	527
<i>Senega</i> var. <i>latifolia</i> .....	587	<i>Peraicaria</i> .....	527
<i>verticillata</i> .....	587	<i>prolificum</i> .....	526
<i>verticillata</i> var. <i>ambigua</i> .....	588	<i>punctatum</i> .....	527
<i>verticillata</i> var. <i>sphenostachya</i> ..	588	<i>ramosissimum</i> .....	526
POLYGALACEAE .....	587	<i>robustius</i> .....	527
POLYGONACEAE .....	525	<i>sagittatum</i> .....	528
<i>Polygonatum biflorum ovatum</i> ....	503	<i>scandens</i> .....	528
<i>canaliculatum</i> .....	503	<i>setaceum</i> .....	527
<i>canaliculatum</i> var. <i>ovatum</i> ....	503	<i>tenue</i> .....	526
<i>commutatum</i> .....	503	<i>triangulum</i> .....	526
<i>commutatum ovatum</i> .....	503	<i>virginianum</i> .....	528
<i>giganteum</i> .....	503	<i>Polymnia canadensis</i> .....	666
<i>ovatum</i> .....	503	<i>canadensis</i> var. <i>radiata</i> .....	666
<i>Polygonella americana</i> .....	528	<i>Uvedalia</i> var. <i>densipilis</i> .....	666
<i>Polygonum achoreum</i> .....	526	<i>Uvedalia</i> var. <i>genuina</i> .....	666
<i>acre</i> .....	527	<i>Polytaenia Nuttallii</i> .....	611
<i>acre</i> var. <i>leptostachyum</i> .....	527	<i>Polypremum procumbens</i> .....	618
<i>amphibium</i> of Am. auth. ....	527	<i>Polypteris callosa</i> .....	675
<i>arifolium</i> .....	528	<i>Pond-lily</i> , yellow .....	538
<i>aviculare</i> .....	526	<i>Pondweed</i> .....	
<i>aviculare</i> var. <i>angustissimum</i> ....	526	<i>Fennel-leaved</i> .....	456
<i>aviculare</i> var. <i>littorale</i> .....	526	<i>Horned</i> .....	456
<i>aviculare</i> var. <i>vegetum</i> .....	526	<i>Large-leaved</i> .....	455
<i>buxiforme</i> .....	526	<i>Long-leaved</i> .....	455
<i>coccineum</i> .....	527	<i>Shining</i> .....	455

	Page		Page
Spotted .....	455	illinoensis .....	455
<i>Pontederia cordata</i> .....	497	lucens .....	455
PONTEDERIACEAE .....	497	natans .....	455
Poor Man's Weatherglass .....	616	panormitanus var. major .....	455
Poplar .....		panormitanus var. minor .....	456
Carolina .....	513	pectinatus .....	456
Downy .....	513	puleher .....	455
Silver .....	513	rotundatus .....	456
Yellow .....	544	<i>Spirillus</i> of Am. auth. ....	456
Poppy .....		<i>Potentilla arguta</i> .....	566
Celandine .....	546	<i>canadensis</i> of auth. ....	566
Common .....	546	<i>canadensis</i> var. <i>simplex</i> .....	566
Corn .....	546	<i>canadensis</i> var. <i>villosissima</i> ...	566
Mexican .....	546	<i>caroliniana</i> .....	566
Prickly .....	546	<i>monspeiciensis</i> .....	566
Poppy Mallow .....	599	<i>Nicolletii</i> .....	566
Clustered .....	598	<i>norvegica</i> var. <i>hirsuta</i> .....	566
Fringed .....	599	<i>paradoxa</i> .....	566
Purple .....	598	<i>recta</i> .....	566
<i>Populus alba</i> .....	513	<i>rivalis</i> .....	566
<i>balsamifera</i> .....	513	<i>rivalis</i> var. <i>millegrana</i> .....	566
<i>balsamifera</i> var. <i>pilosa</i> .....	513	<i>rivalis</i> var. <i>pentandra</i> .....	566
<i>canadensis</i> var. <i>Eugenei</i> .....	513	<i>simplex</i> .....	566
<i>deltoides</i> .....	513	<i>simplex</i> of auth. ....	566
<i>deltoides</i> f. <i>pilosa</i> .....	513	<i>simplex</i> var. <i>argyrisma</i> .....	567
<i>grandidentata</i> .....	513	<i>simplex</i> var. <i>calvescens</i> .....	566
<i>heterophylla</i> .....	513	Poverty Grass .....	469
<i>tremuloides</i> .....	513	Branching .....	469
Poreupine Grass .....	469	Prairie Pink .....	618
Portulaca .....	538	<i>Prenanthes alba</i> .....	682
<i>grandiflora</i> .....	538	<i>altissima</i> var. <i>cinnamomea</i> ....	682
<i>neglecta</i> .....	538	<i>aspera</i> .....	682
<i>oleracea</i> .....	538	<i>crepidinea</i> .....	682
<i>parvula</i> .....	538	Prickly Pear .....	604
<i>pilosa</i> .....	538	Wild Lettuce .....	681
<i>retusa</i> .....	538	Primrose .....	
PORTULACACEAE .....	537	Evening .....	606
Possum Haw .....	591	Missouri .....	607
<i>Potamogeton americanus</i> .....	455	White Evening .....	607
<i>amplifolius</i> .....	455	Primrose-willow .....	605
<i>crispus</i> .....	455	Floating .....	605
<i>dimorphus</i> of Am. auth. ....	456	PRIMULACEAE .....	615
<i>diversifolius</i> .....	456	Prince's Feather .....	527, 532
<i>foliosus</i> .....	455	Privet, Swamp .....	618
<i>foliosus</i> var. <i>genuinus</i> .....	455	<i>Proserpinaca palustris</i> .....	608
<i>foliosus</i> var. <i>macellus</i> .....	455	<i>palustris</i> var. <i>amblyogona</i> ....	608
<i>hybridus</i> of Am. auth. ....	456	<i>palustris</i> var. <i>crebra</i> .....	608

	Page		Page
<i>Prunella vulgaris</i> .....	632	Putty-root .....	510
<i>vulgaris</i> var. <i>lanceolata</i> .....	632	<i>Pycnanthemum albescens</i> .....	635
<i>vulgaris</i> var. <i>lanceolata</i> f. <i>iody-</i>		<i>flexuosum</i> .....	634
<i>calyx</i> .....	632	<i>incanum</i> .....	635
<i>Prunus americana</i> .....	573	<i>muticum</i> .....	635
<i>angustifolia</i> .....	572	<i>pilosum</i> .....	635
<i>angustifolia</i> var. <i>varians</i> .....	572	Torrei .....	634
<i>arkansana</i> .....	573	<i>virginianum</i> .....	635
<i>Cerasus</i> .....	573	<i>Pyrrophappus carolinianus</i> .....	682
<i>hortulana</i> .....	572	<i>Pyrus communis</i> .....	556
<i>hortulana</i> var. <i>pubens</i> .....	572	<i>coronaria</i> .....	557
<i>lanata</i> .....	573	<i>icensis</i> .....	558
Mahaleb .....	573	<i>Malus</i> .....	556
<i>mexicana</i> .....	573	x <i>Soulardi</i> .....	557
<i>Munsoniana</i> .....	572		
<i>Palmeri</i> .....	573		
<i>serotina</i> .....	572		
<i>spinosa</i> .....	573		
<i>virginiana</i> .....	572		
<i>Pædera quinquefolia</i> .....	595		
<i>quinquefolia</i> var. <i>hirsuta</i> .....	595		
<i>quinquefolia</i> var. <i>Saint-Paulii</i> ..	596		
<i>vitacea</i> .....	596		
<i>Psoralea argophylla</i> .....	577		
<i>esculenta</i> .....	577		
<i>floribunda</i> .....	577		
<i>Onobrychis</i> .....	577		
<i>pedunculata</i> .....	577		
<i>tenuiflora</i> .....	577		
<i>tenuiflora</i> var. <i>floribunda</i> .....	577		
<i>Ptelea trifoliata</i> .....	587		
<i>Ptilimnium capillaceum</i> .....	610		
<i>Nuttallii</i> .....	610		
<i>Puccoon</i> .....			
Orange .....	628		
Yellow .....	628		
Pumpkin .....	653		
Purple .....			
Love Grass .....	461		
Rocket .....	551		
Top .....	462		
Purslane .....	538		
Milk .....	589		
Notched .....	538		
Water .....	604		
Pursley .....	538		
Pussy's Toes .....	665		

	Page		Page
Muhlenbergii .....	518	RANUNCULACEAE .....	539
Muhlenbergii f. <i>Alexanderi</i> ....	518	<i>Ranunculus abortivus</i> .....	540
× <i>mutabilis</i> .....	521	<i>acris</i> .....	541
nigra .....	519	<i>aquatilis</i> var. <i>capillaceus</i> .....	539
Nuttallii .....	519	<i>caricetorum</i> .....	540
<i>pagodaefolia</i> .....	518	<i>Cymbalaria</i> f. <i>hebecaulis</i> .....	539
palustris .....	519	<i>delphinifolius</i> .....	539
Phellos .....	519	<i>delphinifolius</i> var. <i>terrestris</i> ....	539
× <i>Porteri</i> .....	520	<i>fascicularis</i> .....	540
prinoides .....	518	<i>Harveyi</i> .....	540
Prinus .....	518	<i>Harveyi</i> f. <i>pilosus</i> .....	540
× <i>Richteri</i> .....	520	<i>Harveyi</i> var. <i>pilosus</i> .....	540
rubra .....	518	<i>hispidus</i> .....	540
rubra of auth. ....	519	<i>hispidus</i> var. <i>falsus</i> .....	540
rubra var. <i>ambigua</i> .....	519	<i>laxicaulis</i> .....	539
rubra var. <i>leucophylla</i> .....	518	<i>longirostris</i> .....	539
× <i>runcinata</i> .....	520	<i>micranthus</i> .....	540
<i>Schneckii</i> .....	519	<i>oblongifolius</i> .....	539
× <i>Shirlingii</i> .....	521	<i>parviflorus</i> .....	541
Shumardii .....	519	<i>pusillus</i> .....	539
Shumardii var. <i>Schneckii</i> .....	519	<i>recurvatus</i> .....	540
stellata .....	517	<i>repens</i> .....	540
× <i>subfalcata</i> .....	520	<i>secleratus</i> .....	539
tezana of auth. ....	519	<i>septentrionalis</i> .....	540
× <i>tridentata</i> .....	520	<i>sicaeformis</i> .....	540
<i>triloba</i> .....	518	<i>Raphanus sativus</i> .....	548
× <i>vaga</i> .....	521	Raspberry .....	
velutina .....	520	Black .....	567
velutina var. <i>missouriensis</i> .....	520	Red .....	567
R			
<i>Radiola aquatica</i> .....	550	<i>Ratibida columnaris</i> .....	670
<i>Armoracia</i> .....	550	<i>columnaris</i> f. <i>pulcherrima</i> .....	670
<i>Nasturtium-aquaticum</i> .....	550	<i>pinnata</i> .....	670
<i>obtusum</i> .....	550	<i>Rattle Weed</i> .....	578
<i>palustris</i> of Am. auth. ....	550	<i>Rattle-box</i> .....	575, 592
<i>palustris</i> var. <i>hispidum</i> .....	550	<i>Rattlesnake Master</i> .....	609
<i>sessiliflora</i> .....	550	<i>Rattlesnake Plantain</i> .....	119
<i>sinuata</i> .....	550	Downy .....	510
<i>sylvestris</i> .....	550	<i>Rattlesnake-root</i> .....	682
<i>Radiata</i> .....	548	<i>Red Top, Tall</i> .....	462
<i>Ragged Robin</i> .....	679	<i>Redbud</i> .....	575
<i>Ragweed</i> .....	668	<i>Red-root</i> .....	567, 595
<i>Ragwort</i> .....		<i>Reed</i> .....	462
Golden .....	678	Giant .....	462
Prairie .....	678	<i>Reed Grass</i> .....	
		Long-leaved .....	465
		Wood .....	466

	Page		Page
RHAMNACEAE .....	595	hispidia var. glabrata .....	550
Rhamnus caroliniana .....	595	Nasturtium-aquaticum .....	550
caroliniana var. mollis .....	595	obtusa .....	550
cathartica .....	595	sessiliflora .....	550
lanceolata .....	595	sinuata .....	550
Rhexia interior .....	605	sylvestris .....	550
latifolia .....	605	Rosa Aucuparia .....	570
mariana var. leiosperma .....	605	blanda .....	570
virginica .....	605	Bushii .....	571
Rhododendron nudiflorum .....	613	canina .....	572
nudiflorum var. roseum .....	613	carolina .....	571
Rhus canadensis .....	591	carolina of auth. ....	571
canadensis var. illinoensis .....	591	carolina var. glandulosa .....	571
canadensis var. serotina .....	591	carolina var. grandiflora .....	571
canadensis var. trilobata .....	591	carolina var. Lyoni .....	571
copallina .....	591	centifolia .....	572
cotinoides .....	591	conjuncta .....	570
glabra .....	591	dasistema .....	571
quercifolia .....	591	Eglantaria .....	572
Toxicodendron .....	591	heliophila .....	570
trilobata .....	591	humilis .....	571
Rhynchosia latifolia .....	584	Lyoni .....	571
tomentosa .....	584	obovata .....	571
Rib Grass .....	647	Palmeri .....	571
Ribes aureum of auth. ....	555	palustris .....	571
Cynosbati .....	555	palustris var. dasistema .....	571
gracile .....	555	petiolata .....	571
missouriense .....	555	polyanthema .....	571
odoratum .....	555	pratensis .....	570
Rice .....	480	relicta .....	570
Black-seeded Mountain .....	469	rubiginosa .....	572
Indian .....	472	rudiuscula .....	570
Jungle .....	478	rugosa .....	572
Water .....	472	serrulata .....	571
Richweed .....	524	setigera .....	569
Ricinus communis .....	589	setigera f. inermis .....	569
Robinia Pseudo-Acacia .....	578	setigera var. serena .....	569
Robin's Plantain .....	665	setigera var. tomentosa .....	569
Rock Pink .....	537	spinosissima .....	572
Rose .....	601	subserrulata .....	571
Rocket .....		suffulta .....	570
Purple .....	551	suffulta var. valida .....	570
Yellow .....	550	virginiana of auth. in part .....	571
Rocky Mountain Bee-plant .....	552	ROSACEAE .....	566
Roripa aquatica .....	550	Rose .....	
Armoracia .....	550	Climbing .....	569
hispidia .....	550	Dog .....	572



	Page		Page
German .....	624	<i>longipes</i> .....	669
Meadow .....	570	<i>maxima</i> .....	670
Pasture .....	571	<i>missouriensis</i> .....	669
Prairie .....	569	<i>palustris</i> .....	669
Swamp .....	571	<i>sericea</i> .....	669
Rose Moss .....	538	<i>speciosa</i> .....	669
Rose of Sharon .....	599	<i>subtomentosa</i> .....	669
Rose Pink .....	618	<i>subtomentosa</i> var. <i>Craigii</i> .....	669
Rosin-weed .....	667	<i>triloba</i> .....	669
Starry .....	667	Rue .....	587
<i>Rotala ramosior</i> of auth. ....	605	Early Meadow .....	541
<i>ramosior</i> var. <i>interior</i> .....	605	Goat's .....	578
<i>Rottboellia cylindrica</i> .....	480	Rue Anemone .....	541
RUBIACEAE .....	647	<i>Ruellia caroliniensis</i> .....	646
<i>Rubus abactus</i> .....	568	<i>caroliniensis</i> var. <i>parviflora</i> ....	646
<i>alleghehiensis</i> .....	567	<i>ciliata</i> .....	646
<i>alumnus</i> .....	567	<i>ciliata</i> var. <i>parviflora</i> .....	646
<i>argutus</i> of auth. ....	567	<i>parviflora</i> .....	646
<i>Andrewsianus</i> .....	567	<i>pedunculata</i> .....	646
Bushii .....	568	<i>Rumex Acetosella</i> .....	526
<i>continentalis</i> .....	568	<i>altissimus</i> .....	525
<i>Deamii</i> .....	567	<i>Britannica</i> .....	525
<i>flagellaris</i> .....	568	<i>crispus</i> .....	525
<i>flagellaris</i> var. <i>occidua</i> .....	568	<i>crispus</i> × <i>obtusifolius</i> .....	526
<i>frondosus</i> .....	568	<i>elongatus</i> .....	525
<i>heterophyllus</i> .....	568	<i>hastatulus</i> .....	525
<i>idaeus</i> var. <i>aculeatissimus</i> .....	567	<i>maritimus</i> var. <i>fueginus</i> .....	525
<i>idaeus</i> var. <i>strigosus</i> .....	567	<i>mexicanus</i> .....	525
<i>invisus</i> .....	568	<i>obtusifolius</i> .....	525
<i>laciniatus</i> .....	568	<i>Patientia</i> var. <i>kurdicus</i> .....	525
<i>laudatus</i> .....	567	<i>persicarioides</i> .....	525
<i>missouriicus</i> .....	568	<i>sanguineus</i> .....	525
<i>nefrens</i> .....	568	<i>verticillatus</i> .....	525
<i>occidentalis</i> .....	567	<i>Rupia maritima</i> var. <i>rostrata</i> ....	456
<i>ostriifolius</i> .....	567	Rush .....	498
<i>procerus</i> .....	567	False Bog .....	486
<i>procumbens</i> .....	568	Horned .....	485
<i>recurvans</i> .....	568	Knotted .....	499
<i>rubricatus</i> .....	568	Knotty-leaved .....	499
<i>trivialis</i> .....	568	Slender .....	498
<i>villosus</i> .....	568	Spike .....	482, 483
<i>Rudbeckia amplexicaulis</i> .....	670	Creeping .....	483
<i>fulgida</i> .....	669	Toad .....	498
<i>fulgida</i> of auth. ....	669	Russian Olive .....	604
<i>grandiflora</i> .....	669	Thistle .....	532
<i>hirta</i> .....	669	<i>Ruta graveolens</i> .....	587
<i>laciniata</i> .....	670	<i>Rutabaga</i> .....	549



	Page		Page
<i>Sanguinaria canadensis</i> .....	545	<i>nanus</i> .....	483
<i>canadensis</i> var. <i>rotundifolia</i> ....	545	<i>occidentalis</i> .....	484
<i>Sanicula canadensis</i> .....	609	<i>pallidus</i> .....	485
<i>gregaria</i> .....	609	<i>pedicellatus</i> .....	485
<i>Smallii</i> .....	609	<i>planifolius</i> .....	484
<i>Santa Maria</i> .....	667	<i>validus</i> .....	484
SANTALACEAE .....	524	<i>Scleria ciliata</i> .....	486
SAPINDACEAE .....	594	<i>Elliottii</i> .....	486
<i>Sapindus Drummondii</i> .....	594	<i>oligantha</i> .....	486
<i>Saponaria officinalis</i> .....	537	<i>pauciflora</i> .....	486
<i>Vaccaria</i> .....	537	<i>pauciflora</i> var. <i>caroliniana</i> .....	486
SAPOTACEAE .....	616	<i>reticularis</i> var. <i>pubescens</i> .....	486
<i>Sassafras</i> .....	545	<i>setacea</i> .....	486
<i>officinale</i> .....	545	<i>triglomerata</i> .....	486
<i>officinale</i> var. <i>albidum</i> .....	545	<i>verticillata</i> .....	486
<i>Sassafras</i> .....	545	Scorpion Grass .....	628
<i>varifolium</i> .....	545	<i>Serophularia lanceolata</i> .....	639
<i>Satureja glabra</i> .....	634	<i>leporella</i> .....	639
<i>Saururus cernuus</i> .....	511	<i>marilandica</i> .....	639
<i>Savory</i> .....	634	SCROPHULARIACEAE .....	638
<i>Saxifraga Forbesii</i> .....	553	<i>Scutellaria Bushii</i> .....	631
<i>pennsylvanica</i> var. <i>Forbesii</i> .....	553	<i>canescens</i> .....	631
<i>texana</i> .....	553	<i>canescens</i> var. <i>punctata</i> .....	631
<i>virginianensis</i> .....	553	<i>cordifolia</i> .....	630
SAXIFRAGACEAE .....	553	<i>epilobifolia</i> .....	631
<i>Saxifrage</i> , Early .....	553	<i>galericulata</i> of Am. auth. ....	631
<i>Seabish</i> , False .....	674	<i>incana</i> .....	631
<i>Seale</i> .....		<i>lateriflora</i> .....	630
Red .....	531	<i>lateriflora</i> f. <i>rhodantha</i> .....	630
Silver .....	531	<i>montana</i> .....	631
Spear .....	531	<i>nervosa</i> .....	631
<i>Schedonnardus paniculatus</i> .....	470	<i>ovalifolia</i> .....	631
<i>Schmalzia serotina</i> .....	591	<i>ovata</i> .....	630
<i>Schrankia uncinata</i> .....	573	<i>ovata</i> var. <i>bracteata</i> .....	630
<i>Scilla biflora</i> .....	502	<i>ovata</i> var. <i>pilosior</i> .....	630
<i>Scirpus acutus</i> .....	484	<i>parvula</i> .....	631
<i>americanus</i> .....	484	<i>parvula</i> var. <i>ambigua</i> .....	631
<i>atrovirens</i> .....	485	<i>pilosa</i> .....	631
<i>atrovirens</i> var. <i>georgianus</i> .....	485	<i>punctata</i> .....	631
<i>campestris</i> .....	485	<i>serrata</i> .....	631
<i>carinatus</i> .....	485	<i>versicolor</i> .....	630
<i>divaricatus</i> .....	485	<i>versicolor</i> var. <i>minor</i> .....	630
<i>Eriophorum</i> .....	485	Sea Blite .....	532
<i>fluviatilis</i> .....	485	<i>Secale sereale</i> .....	480
<i>georgianus</i> .....	485	Sedge .....	
<i>lineatus</i> .....	485	Broom .....	479

	Page		Page
Fox .....	488	Sheep Sorrel .....	526, 585
Fringed .....	493	Sour .....	585
Hop .....	494	Shepherd's Purse .....	548
Straw .....	489	Shooting Star .....	616
Tussock .....	493	Shrubby Althea .....	598
<i>Sedum Nevii</i> .....	553	Sickle-pod .....	552
<i>Nuttallianum</i> .....	553	<i>Sicyos angulatus</i> .....	652
<i>pulchellum</i> .....	553	<i>Sida Elliottii</i> .....	598
<i>purpureum</i> .....	553	<i>spinosa</i> .....	598
<i>ternatum</i> .....	553	<i>Silene antirrhina</i> .....	536
<i>triphyllum</i> .....	553	<i>antirrhina</i> var. <i>divaricata</i> .....	536
Seed-box .....	606	<i>gallica</i> .....	536
<i>Sclenia aurea</i> .....	551	<i>latifolia</i> .....	536
Self-heal .....	632	<i>nivea</i> .....	536
<i>Seneca Snakeroot</i> .....	587	<i>noctiflora</i> .....	536
<i>Senecio aureus</i> .....	578	<i>regia</i> .....	537
<i>aureus</i> × <i>Balsamitae</i> .....	678	<i>stellata</i> .....	537
<i>aureus</i> var. <i>gracilis</i> .....	678	<i>virginica</i> .....	536
<i>aureus</i> var. <i>semicordatus</i> .....	678	<i>Wherryi</i> .....	537
<i>Balsamitae</i> .....	678	<i>Wherryi</i> × <i>virginica</i> .....	537
<i>glabellus</i> .....	677	<i>Silphium Asteriscus</i> .....	667
<i>obovatus</i> .....	677	<i>integrifolium</i> .....	667
<i>obovatus</i> var. <i>rotundus</i> .....	678	<i>laciniatum</i> .....	666
<i>obovatus</i> var. <i>umbratilis</i> .....	678	<i>perfoliatum</i> .....	667
<i>pauperculus</i> .....	678	<i>terebinthaceum</i> .....	667
<i>pauperculus</i> var. <i>Balsamitae</i> .....	678	<b>SIMARUBACEAE</b> .....	587
<i>plattensis</i> .....	678	<i>Sisymbrium altissimum</i> .....	549
<i>pseudotomentosus</i> .....	678	<i>canescens</i> .....	549
Sensitive Brier .....	573	<i>canescens</i> var. <i>brachycarpa</i> .....	549
Sensitive Plant, False .....	573	<i>incisum</i> .....	549
<i>Serapias Helleborine</i> .....	509	<i>Nasturtium-aquaticum</i> .....	550
<i>Serinia oppositifolia</i> .....	679	<i>officinale</i> .....	549
Service Berry .....	557	<i>officinale</i> var. <i>leiocarpum</i> .....	549
<i>Sesamum indicum</i> .....	645	<i>Sophia</i> .....	549
<i>orientale</i> .....	645	<i>Thalianum</i> .....	549
<i>Sesbania macrocarpa</i> .....	578	<i>Sisyrinchium albidum</i> .....	508
<i>Setaria geniculata</i> .....	478	<i>angustifolium</i> .....	508
<i>glauca</i> .....	478	<i>campestre</i> .....	508
<i>imberbis</i> .....	478	<i>campestre</i> var. <i>kansanum</i> .....	508
<i>italica</i> .....	478	<i>flaviflorum</i> .....	508
<i>italica</i> var. <i>germanica</i> .....	478	<i>gramineum</i> .....	508
<i>lutescens</i> .....	478	<i>graminoides</i> .....	508
<i>verticillata</i> .....	478	<i>Sitanion elymoides</i> .....	464
<i>viridis</i> .....	478	<i>hystrix</i> .....	464
<i>Seymeria macrophylla</i> .....	642	<i>longifolium</i> .....	464
Shad Bush .....	557	<i>Sium cicutae-folium</i> .....	610
		<i>suave</i> .....	610

	Page		Page
Skulcap, Mad-dog .....	630	glaberrima var. <i>moritura</i> .....	660
Sleepy Catchfly .....	536	graminifolia .....	661
Slough Grass .....	471	gymnospermoides .....	661
Smartweed .....	527	hispidula .....	659
Smilax Bona-nox .....	506	junceae .....	659
<i>ecirrhata</i> .....	505	junceae var. <i>scabrella</i> .....	659
<i>glauca</i> var. <i>genuina</i> .....	506	latifolia .....	658
<i>glauca</i> var. <i>leurophylla</i> .....	506	leptocephala .....	661
<i>herbacea</i> .....	505	Lindheimeriana .....	659
<i>herbacea</i> var. <i>lasioneuron</i> .....	505	<i>longipetiolata</i> .....	660
<i>herbacea</i> var. <i>pulverulenta</i> .....	505	microphylla .....	659
<i>hispidula</i> .....	506	<i>missouriensis</i> of auth. ....	660
<i>rotundifolia</i> var. <i>quadrangularis</i> .....	506	<i>moritura</i> .....	660
Smilacina racemosa .....	503	nemoralis .....	660
<i>stellata</i> .....	503	nemoralis var. <i>longipetiolata</i> ..	660
Smoke Tree .....	591	<i>odora</i> .....	659
Snakeroot .....		<i>patula</i> .....	659
Black .....	543, 609	<i>petiolaris</i> .....	658
Button .....	609	<i>petiolaris</i> var. <i>Wardii</i> .....	658
Seneca .....	587	<i>radula</i> .....	660
Virginia .....	524	<i>rigida</i> .....	661
White .....	656, 682	<i>rugosa</i> .....	660
Sneezeweed .....	675	<i>rugosa</i> var. <i>aspera</i> .....	660
Snow-on-the-mountain .....	590	<i>serotina</i> .....	660
Soapberry .....	594	<i>serotina</i> var. <i>gigantea</i> .....	661
Soapwort .....	537	<i>speciosa</i> .....	659
SOLANACEAE .....	636	<i>speciosa</i> var. <i>angustata</i> .....	659
Solanum carolinense .....	636	<i>suaveolens</i> .....	659
<i>Dulcamara</i> .....	636	<i>ulmifolia</i> .....	659
<i>elaagnifolium</i> .....	636	Solomon's Seal .....	
<i>nigrum</i> .....	636	False .....	503
<i>rostratum</i> .....	637	Large .....	503
<i>Torreyi</i> .....	637	Sonchus arvensis .....	681
<i>triflorum</i> .....	636	<i>asper</i> .....	681
Solidago altissima .....	660	<i>oleraceus</i> .....	681
<i>altissima</i> var. <i>procera</i> .....	660	<i>Sophia brachycarpa</i> .....	549
<i>arguta</i> .....	659	<i>pinnata</i> .....	549
<i>arguta</i> var. <i>Boottii</i> .....	659	<i>Sophia</i> .....	549
<i>aspera</i> .....	660	Sorghastrum nutans .....	480
<i>Boottii</i> .....	659	Sorghum Cane .....	480
<i>caesia</i> .....	658	<i>halapense</i> .....	480
<i>canadensis</i> .....	660	<i>vulgare</i> .....	480
<i>canadensis</i> var. <i>gilvocanescens</i> ..	660	Sorrell .....	
<i>Drummondii</i> .....	661	Lady's .....	585
<i>Gattingeri</i> .....	660	Sheep .....	585
<i>glaberrima</i> .....	660	Wood .....	585

	Page		Page
Sow Thistle .....	681	<i>Spiraea alba</i> .....	556
Spanish Bayonet .....	502	<i>salicifolia</i> of auth. ....	556
Needles .....	674	<i>tomentosa</i> var. <i>rosea</i> .....	556
SPARGANIACEAE .....	454	<i>Spiranthes Beckii</i> .....	509
<i>Sparganium americanum</i> .....	454	<i>cernua</i> .....	510
<i>americanum</i> var. <i>androcladum</i> ...	454	<i>cernua</i> var. <i>ochroleuca</i> .....	510
<i>androcladum</i> .....	455	<i>gracilis</i> .....	509
<i>androcladum</i> of auth. ....	454	<i>lucida</i> .....	510
<i>euryearpum</i> .....	454	<i>ovalis</i> .....	510
<i>lucidum</i> .....	455	<i>vernalis</i> .....	510
<i>simplex</i> var. <i>androcladum</i> .....	454	<i>Spirodela oligorhiza</i> .....	495
<i>Spartina Michauxiana</i> .....	471	<i>polyrhiza</i> .....	495
<i>pectinata</i> .....	471	<i>Sporobolus airoides</i> .....	469
<i>pectinata</i> var. <i>Suttiei</i> .....	471	<i>argutus</i> .....	469
<i>Spatter Dock</i> .....	538	<i>asper</i> .....	468
<i>Spearmint</i> .....	636	<i>asper</i> var. <i>Hookeri</i> .....	468
<i>Spearwort</i> .....	539	<i>asper</i> var. <i>pilosus</i> .....	468
<i>Water Plantain</i> .....	539	<i>asperifolius</i> .....	467
<i>Specularia biflora</i> .....	653	<i>attenuatus</i> .....	468
<i>leptocarpa</i> .....	653	<i>Berteroanus</i> .....	468
<i>perfoliata</i> .....	653	<i>brevifolius</i> .....	466
Speedwell .....		<i>canovirens</i> .....	468
<i>Corn</i> .....	642	<i>clandestinus</i> .....	468
<i>Thyme-leaved</i> .....	642	<i>cryptandrus</i> .....	469
<i>Water</i> .....	642	<i>Drummondii</i> .....	468
<i>Spergula arvensis</i> .....	534	<i>heterolepis</i> .....	468
<i>Spermacoce glabra</i> .....	648	<i>indicus</i> of auth. ....	468
<i>Spermolepis echinata</i> .....	610	<i>neglectus</i> .....	468
<i>patens</i> .....	610	<i>ozarkanus</i> .....	468
<i>Sphenopholis intermedia</i> .....	465	<i>pilosus</i> .....	468
<i>nitida</i> .....	465	<i>Poiretii</i> .....	468
<i>obtusata</i> .....	464	<i>vaginiflorus</i> .....	468
<i>obtusata</i> var. <i>lobata</i> .....	465	<i>Spotted Cowbane</i> .....	610
<i>obtusata</i> var. <i>pubescens</i> .....	464	<i>Sprangle Top, Red</i> .....	470
<i>pallens</i> .....	464	<i>Spring Beauty</i> .....	537
<i>Spice Bush</i> .....	545	Spurge .....	
<i>Spider-flower</i> .....	552	<i>Cypress</i> .....	590
<i>Spider-lily</i> .....	506	<i>Flowering</i> .....	590
<i>Spiderwort</i> .....	496	<i>Nodding</i> .....	589
<i>Spigelia marilandica</i> .....	618	<i>Prairie</i> .....	589
<i>Spike Rush</i> .....	482, 483	<i>Warty</i> .....	590
<i>Creeping</i> .....	483	<i>Squaw-weed</i> .....	677
<i>Spikenard</i> .....		<i>Squirrel Corn</i> .....	546
<i>American</i> .....	609	<i>Squirrel-tail Grass</i> .....	464
<i>False</i> .....	502	<i>Stachys ambigua</i> .....	633
<i>Spilanthes americana</i> var. <i>repens</i> ..	670	<i>aspera</i> .....	632
		<i>aspera</i> of auth. ....	633



	Page		Page
<i>hispida</i> .....	633	Indian .....	566
<i>palustris</i> .....	633	Wild .....	565
<i>palustris</i> of auth. ....	633	Strawberry Blite .....	529
<i>tenuifolia</i> .....	632	Strawberry Bush .....	592
<i>tenuifolia</i> var. <i>aspera</i> ..	633	Running .....	592
Staff-tree .....	414	Strawberry Tomato .....	637
<i>Staphylea trifolia</i> .....	592	Stretch-berry .....	506
STAPHYLEACEAE .....	592	Strophostyles <i>helvola</i> .....	584
Star-grass, Yellow .....	507	<i>helvola</i> var. <i>missouriensis</i> ..	584
Star of Bethlehem .....	502	<i>pauciflora</i> .....	584
Starry Rosin-weed .....	667	<i>umbellata</i> .....	584
Starwort .....		<i>Stylophorum diphyllum</i> .....	546
False .....	661	<i>Stylosanthes biflora</i> .....	582
Water .....	590	<i>biflora</i> var. <i>hispidissima</i> .....	583
<i>Steinchisma hians</i> .....	477	STYRACACEAE .....	617
<i>Steironema ciliatum</i> .....	615	<i>Styrax americana</i> .....	617
<i>lanceolatum</i> .....	615	<i>Suneda depressa</i> .....	532
<i>lanceolatum</i> var. <i>angustifolium</i> ..	615	Sugarberry .....	522
<i>lanceolatum</i> var. <i>hybridum</i> ..	616	<i>Sullivantia renifolia</i> .....	553
<i>quadriflorum</i> .....	616	<i>Sullivantii</i> of auth. ....	553
<i>radicans</i> .....	615	Sumach .....	
<i>Stellaria graminea</i> .....	535	Fragrant .....	591
<i>longifolia</i> .....	535	Smooth .....	591
<i>media</i> .....	535	Sundrops .....	606, 607
<i>pubera</i> var. <i>silvatica</i> .....	535	Sunflower .....	670
<i>Stenanthium gramineum</i> .....	500	Kansas .....	670
<i>gramineum</i> f. <i>robustum</i> .....	500	Prairie .....	670
<i>robustum</i> .....	500	Small Woods .....	671
<i>Stenophyllus capillaris</i> .....	483	Supple-Jack .....	595
<i>capillaris</i> var. <i>cryptostachys</i> ..	484	Swamp Privet .....	618
<i>Stenosiphon linifolius</i> .....	608	Sweet-brier .....	572
Stick Leaf .....	604	Sweet .....	
Stickseed .....	628	<i>Cicely</i> .....	610
Stickweed .....	628	Smooth .....	610
Sticktight .....	674	Woolly .....	610
<i>Stipa spartea</i> .....	469	Flag .....	495
Stitchwort .....		Gum .....	555
Long-leaved .....	535	Vernal Grass .....	471
Narrow-leaved .....	535	William .....	536, 625
Stonecrop, Ditch .....	552	Switch Cane .....	458
Yellow-flowered .....	553	Sycamore .....	555
Storax, Smooth .....	617	<i>Symphoricarpos occidentalis</i> .....	650
Storksbill .....	586	<i>orbiculatus</i> .....	650
Straw-flower .....	501	<i>Symphytum officinale</i> .....	628
Strawberry .....		<i>Syntherisma linearis</i> .....	472
Garden .....	566	<i>marginata</i> .....	472

## T

	Page		Page
<i>Taenidia integerrima</i> .....	611	Russian .....	532
<i>Tagetes erecta</i> .....	675	Scotch .....	679
<i>Talinum calycinum</i> .....	537	Swamp .....	679
<i>parviflorum</i> .....	537	<i>Thlaspi arvense</i> .....	547
TAMARICACEAE .....	600	<i>perfoliatum</i> .....	547
Tamariak .....	600	Thorn, Cockspur .....	557
<i>Tamarix gallica</i> .....	600	Washington .....	504
<i>Tanacetum vulgare</i> .....	676	Thorn Apple, Purple .....	638
<i>vulgare</i> var. <i>crispum</i> .....	676	Thorough-wax .....	610
Tansey .....	676	Thoroughwort .....	656
<i>Taraxacum erythrospermum</i> .....	680	Three-square .....	484
<i>laevigatum</i> .....	680	THYMELAEACEAE .....	604
<i>officinale</i> .....	680	Tickseed .....	
<i>palustre</i> var. <i>vulgare</i> .....	680	Star .....	673
Tassel Flower .....	656	Tall .....	673
Red .....	577	Tickseed <i>Coreopsis</i> .....	673
White .....	578	<i>Tilia americana</i> .....	597
<i>Taxodium distichum</i> .....	454	<i>floridana</i> .....	597
Tear-thumb .....		<i>floridana</i> var. <i>hypoleuca</i> .....	597
Arrow-leaved .....	528	<i>glabra</i> .....	597
Halberd-leaved .....	528	<i>heterophylla</i> var. <i>Michauxii</i> .....	597
Tear Blanket .....	608	<i>Michauxii</i> .....	597
Teasel .....	652	TILLIACEAE .....	597
<i>Tecoma radicans</i> .....	645	Timothy .....	466
<i>Tephrosia virginiana</i> .....	578	<i>Tithymalus arkansanus</i> .....	590
<i>virginiana</i> var. <i>holosericea</i> .....	578	<i>missouriensis</i> .....	590
<i>Teucrium canadense</i> of auth. ....	630	Toadflax, Blue .....	630
<i>canadense</i> var. <i>virginicum</i> .....	630	Tobacco .....	
<i>occidentale</i> .....	630	Indian .....	654
<i>Thalia dealbata</i> .....	508	Ladies' .....	638
<i>Thalictrum dasycarpum</i> .....	541	Wild .....	666
<i>dioicum</i> .....	541	Tomatillo .....	637
<i>revolutum</i> .....	541	Tomato .....	638
<i>Thaspium aureum</i> of auth. ....	611	Strawberry .....	637
<i>barbinode</i> .....	611	Tonguegrass .....	548
<i>trifoliatum</i> .....	611	Tooth-cup .....	605
<i>trifoliatum</i> var. <i>flavum</i> .....	611	Toothwort .....	551
<i>Thelesperma gracile</i> .....	674	<i>Torilis Anthriscus</i> .....	612
<i>trifidum</i> .....	674	Touch-me-not .....	
Thimbleweed .....	542	Pale-flowered .....	594
Thistle .....		Spotted-flowered .....	595
Barnaby's .....	679	<i>Toxicoscordion Nuttallii</i> .....	500
Bull .....	678	<i>Trachelospermum difforme</i> .....	621
Canada .....	679	<i>Tradescantia bracteata</i> .....	496
Cotton .....	679	<i>brevicaulis</i> .....	496
Curly .....	678	<i>canaliculata</i> .....	496
		<i>Ernestiana</i> .....	496





	Page		Page
Vervain		papilionacea	601
Blue	629	papilionacea × pedatifida	603
White	629	papilionacea × sororia	603
Vetch		papilionacea × triloba	603
Bushy	583	pedata	601
Crown	579	pedata var. lineariloba	601
Spring	583	pedatifida	602
Winter	583	pedatifida × sagittata	603
Viburnum affine	651	pedatifida × sororia	603
affine var. hypomalacum	651	<i>pratincta</i>	601
<i>Bushii</i>	651	pubescens	603
Lentago	652	Rafinesquii	603
molle	651	sagittata	602
molle f. leiophyllum	651	sagittata × sororia	603
prunifolium	651	<i>scabriuscula</i>	603
prunifolium var. <i>Bushii</i>	651	sororia	602
<i>pubescens</i> of auth.	651	sororia × triloba	603
<i>pubescens</i> var. <i>Deamii</i>	651	striata	603
<i>radiculum</i>	651	<i>subsagittata</i>	602
Vicia americana	583	triloba	602
<i>angustifolia</i>	583	triloba var. dilatata	602
<i>caroliniana</i>	583	viarum	602
<i>ludoviciana</i>	583	VIOLACEAE	601
<i>micrantha</i>	583	Violet	
<i>sativa</i>	583	Bird-foot	601
<i>tetrasperma</i>	583	Dog-tooth	
<i>villosa</i>	583	Prairie	502
Vigna sinensis	584	White	502
Vinea minor	621	Yellow	502
Vincetoxicum Baldwinianum	623	Green	601
<i>carolinense</i>	623	Narrow-leaved	602
<i>gonocarpus</i>	622	Northern White	602
<i>obliquum</i>	623	Pale	603
Vine Mesquite	477	Prairie	602
Viola arvensis	603	Star	649
<i>eucullata</i>	602	Water	615
<i>emarginata</i>	602	Yellow	603
<i>emarginata</i> × <i>sororia</i>	603	<i>Viorna Pitcheri</i>	542
<i>eriocarpa</i>	603	Virginia Cowslip	628
<i>eriocarpa</i> var. <i>leiocarpa</i>	603	Creeper	595
<i>imbriatula</i>	602	Snakeroot	524
<i>lanceolata</i>	602	Willow	554
<i>Lovelliana</i>	602	Virgin's Bower	542
<i>missouriensis</i>	601	VITACEAE	595
<i>missouriensis</i> × <i>sororia</i>	603	Vitis aestivalis	596
<i>pallens</i>	602	<i>bicolor</i>	596
<i>palmata</i>	602	<i>cinerea</i>	596





	Page
Wormwood .....	676
Yam .....	506
Willow .....	
Black .....	511
Brittle .....	511
Crack .....	511
Dwarf Gray .....	512
Dwarf Pussy .....	512
Heart-leaved .....	512
Peach-leaved .....	511
Prairie .....	512
Purple .....	512
Pussy .....	512
Sand-bar .....	511
Silky .....	512
Virginia .....	554
Ward's .....	511
Water .....	646
Weeping .....	512
White .....	511
Willow Herb .....	606
Windmill Grass .....	471
Wine Cups .....	598
Winter-berry .....	592
Wisteria frutescens .....	578
macrostachya .....	578
Witch-hazel .....	555
Ozark .....	555
Wolfberry .....	650
Wolfia columbiana .....	495
papulifera .....	495
Wolfiella floridana .....	496
Wood Angelica .....	612
Betony .....	644
Nettle .....	524
Reed Grass .....	466
Woollen Breeches .....	626
Wormwood .....	676
Roman .....	668
Wild .....	676
Wormwood Sage .....	676

## X

Xanthium acerosum .....	668
canadense .....	669
chinense .....	668

	Page
chinense × pennsylvanicum ....	669
commune .....	668
echinatum .....	668
glanduliferum .....	668
globosum .....	668
inflexum .....	668
italicum .....	668
italicum × pennsylvanicum ....	669
pennsylvanicum .....	668
speciosum .....	668
spinosum .....	668
Xanthoxalis Bushii .....	585
corniculata .....	585
cymosa .....	585
interior .....	585
XYRIDACEAE .....	497
Xyris flexuosa .....	497

## Y

Yam, Wild .....	506
Yanquapin .....	538
Yard Grass .....	470
Yarrow .....	675
Yellow Wood .....	575
Yellow-flowered Stonecrop .....	553
Yellow Rocket .....	550
Yellow-root .....	544
Yucca arkansana .....	502
filamentosa .....	502
glaucous .....	502

## Z

Zannichellia palustris .....	456
Zanthoxylum americanum .....	587
Zea Mays .....	480
Zigadenus chloranthus .....	500
elegans .....	500
glaucus .....	500
Nuttallii .....	500
Zizania aquatica var. interior ....	472
Zizaniopsis miliacea .....	472
Zizia aurea .....	610
cordata .....	611
ZYGOPHYLLACEAE .....	586

## EXPLANATION OF PLATE

## PLATE 15

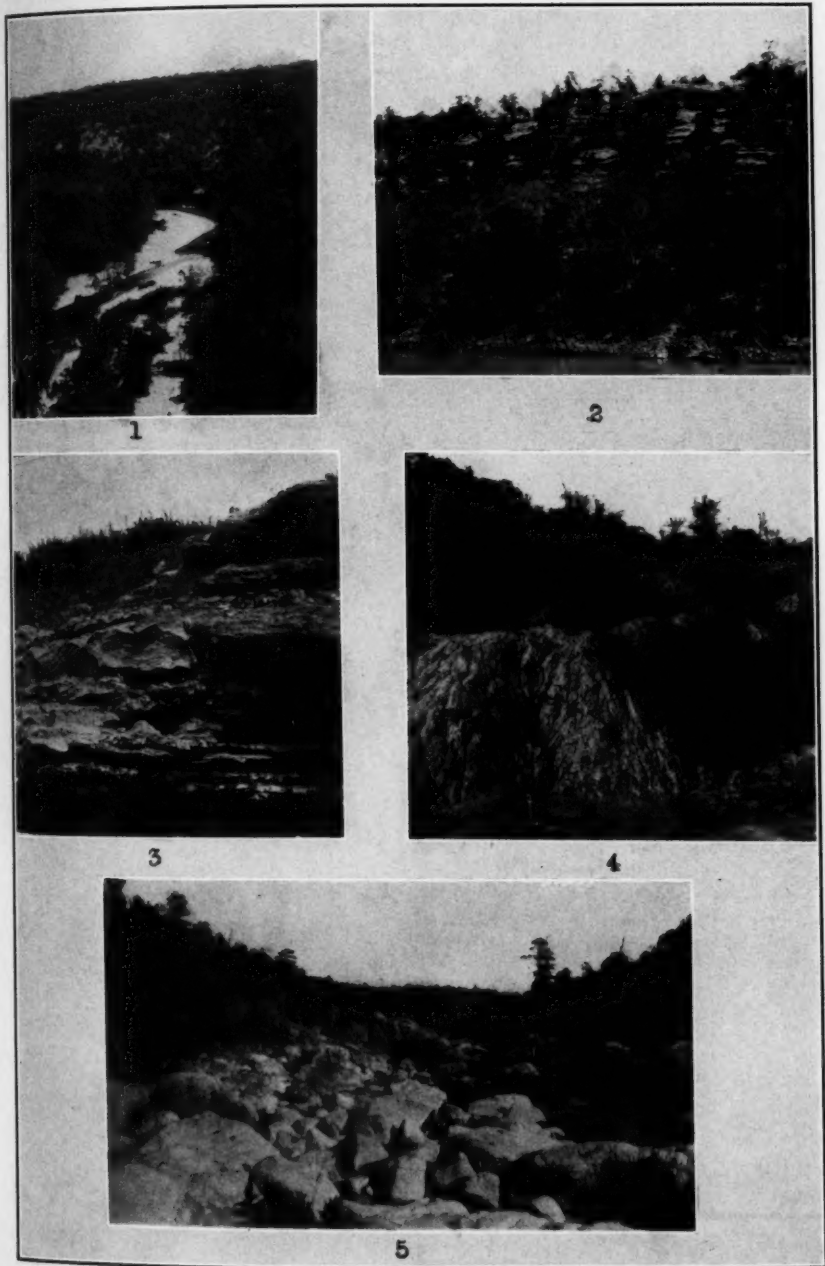
Fig. 1. St. Francis River, Wayne Co., showing gravel bars typical of many Ozark streams, and deciduous oak-hickory forest on granitic substratum.

Fig. 2. Dolomite bluffs of the White River, Barry Co., with *Juniperus mexicana* near top and rich talus slope below.

Fig. 3. Mississippian limestone with interbedded chert, the latter producing acid soils when left as a surface deposit after erosion and solution of the limestone, Jasper Co.

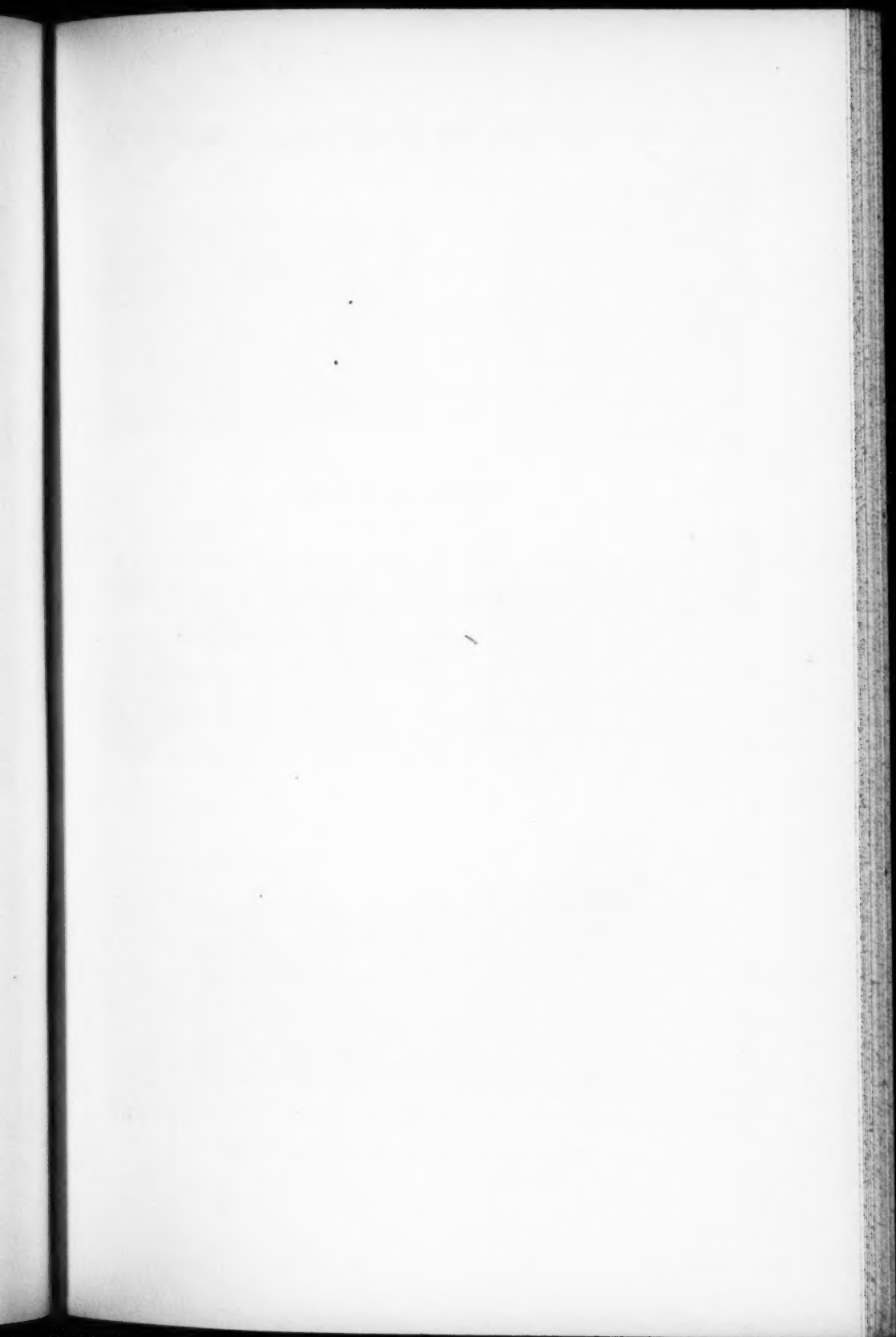
Fig. 4. Erosion in loess, Clark Co.

Fig. 5. Porphyry "shut-in" along Little St. Francis River, Madison Co., showing *Pinus echinata* along stream course.



PALMER & STEYERMARK—PLANTS OF MISSOURI





## EXPLANATION OF PLATE

## PLATE 16

Fig. 1. Bald knobs, Ozark Co., showing the advance of the forest upon the glades.

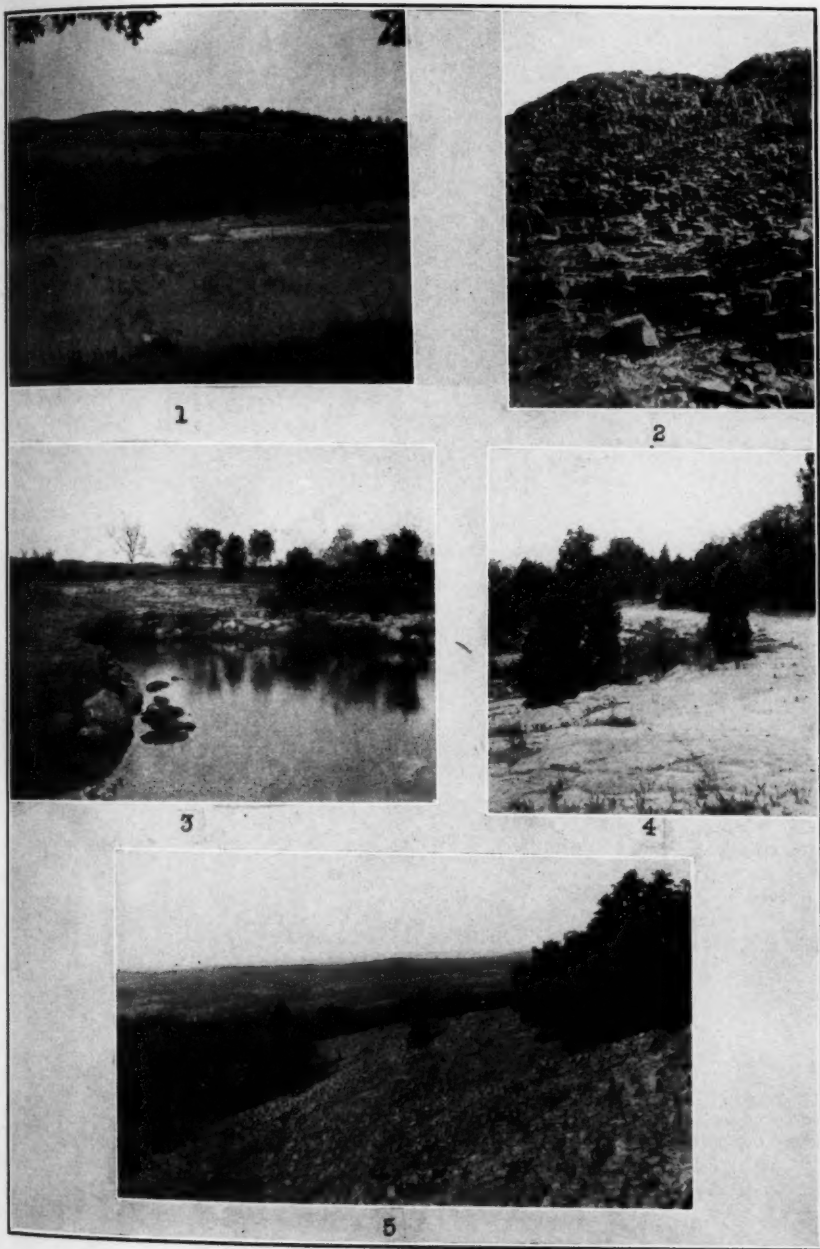
Fig. 2. Porphyritic trachyte glade, summit of Hughes Mountain, St. Francois Co., showing weathering of the formation into block-like structures.

Fig. 3. Grand Falls chert glades, Newton Co., habitat of several southwestern species not found elsewhere in the state.

Fig. 4. St. Peter sandstone glade with *Juniperus virginiana* and deciduous forest along margin, Jefferson Co.

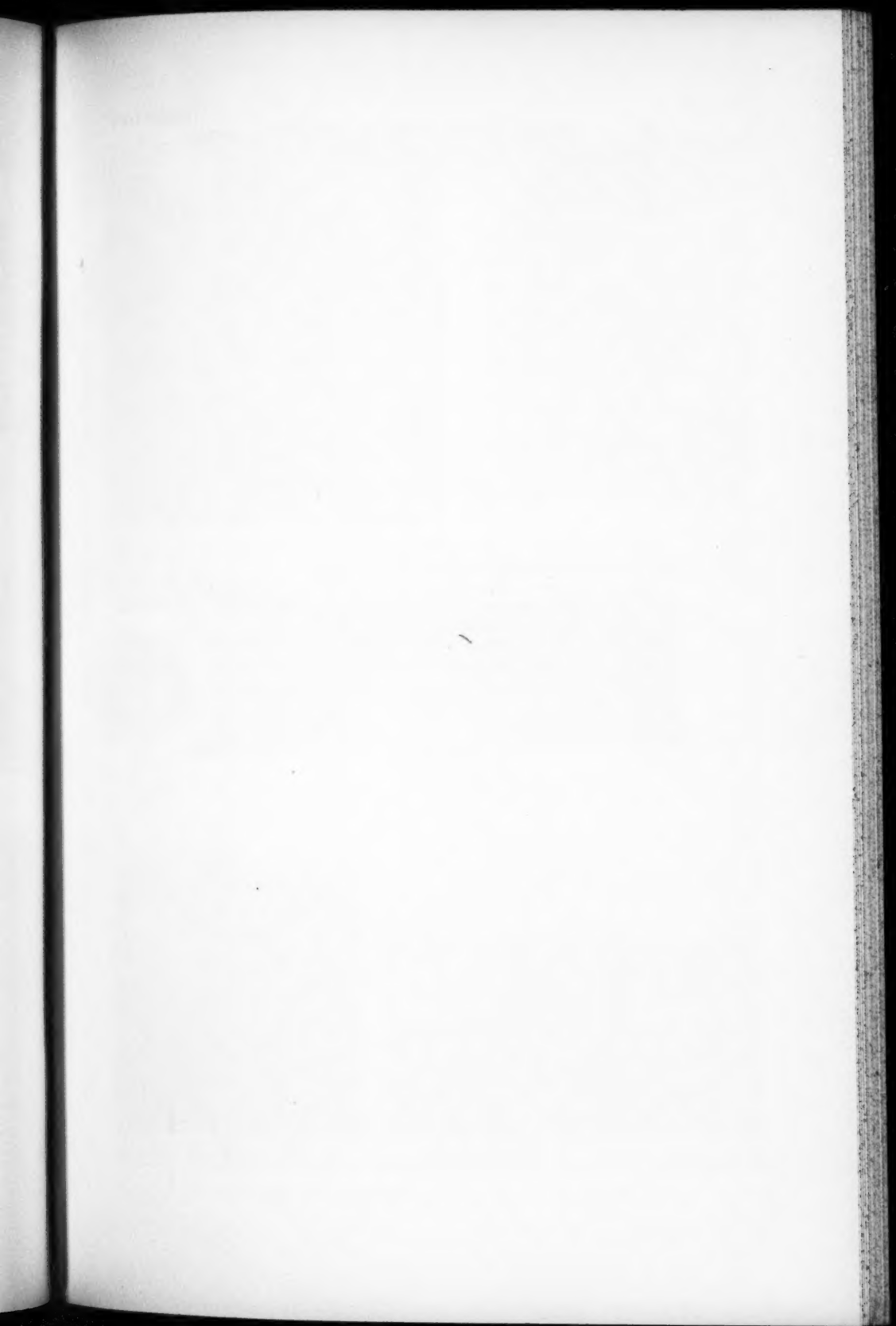
Fig. 5. Porphyritic trachyte glade, typical of the Iron Mountain area in the eastern Ozarks, Hughes Mountain, St. Francois Co.





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## EXPLANATION OF PLATE

## PLATE 17

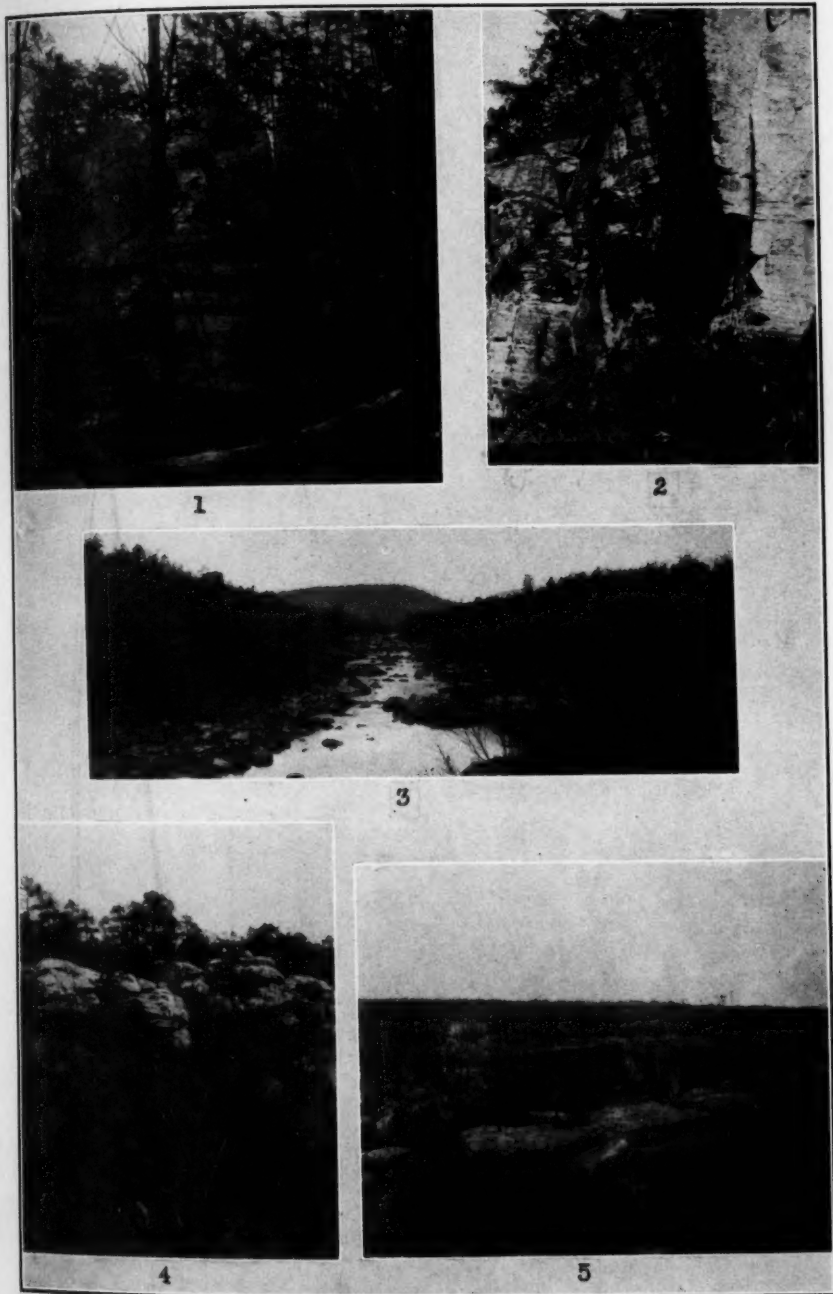
Fig. 1. La Motte sandstone bluff in wooded ravine, Ste. Genevieve Co., western limit of a number of eastern and Appalachian species.

Fig. 2. St. Peter sandstone bluff with slough at base, Jefferson Co.

Fig. 3. Porphyritic trachyte "shut-in" along Little St. Francis River, Madison Co., with forest of *Pinus echinata* on slopes.

Fig. 4. La Motte sandstone bluffs with *Pinus echinata* above, Ste. Genevieve Co.

Fig. 5. Sandstone outcrops on high prairies, Jasper Co., locality for *Geocarpus minimum* and other rare species.



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## EXPLANATION OF PLATE

## PLATE 18

Fig. 1. Chert glades, outcrops of Grand Falls chert, Jasper Co.

Fig. 2. Dolomite ledges near top of bald knob, with *Delphinium Treleasei*, Barry Co.

Fig. 3. Loess mounds, Holt Co., showing high plains and prairie vegetation on exposed ridges and slopes, and beginnings of forest in depressions and ravines. A good example of the influence of exposure to winds and evaporation on floral formations.

Fig. 4. Alluvial bottoms of Missouri River, with lake in distance and loess mounds on sky-line in background, Holt Co.

Fig. 5. Glaciated prairies topography, Schuyler Co.



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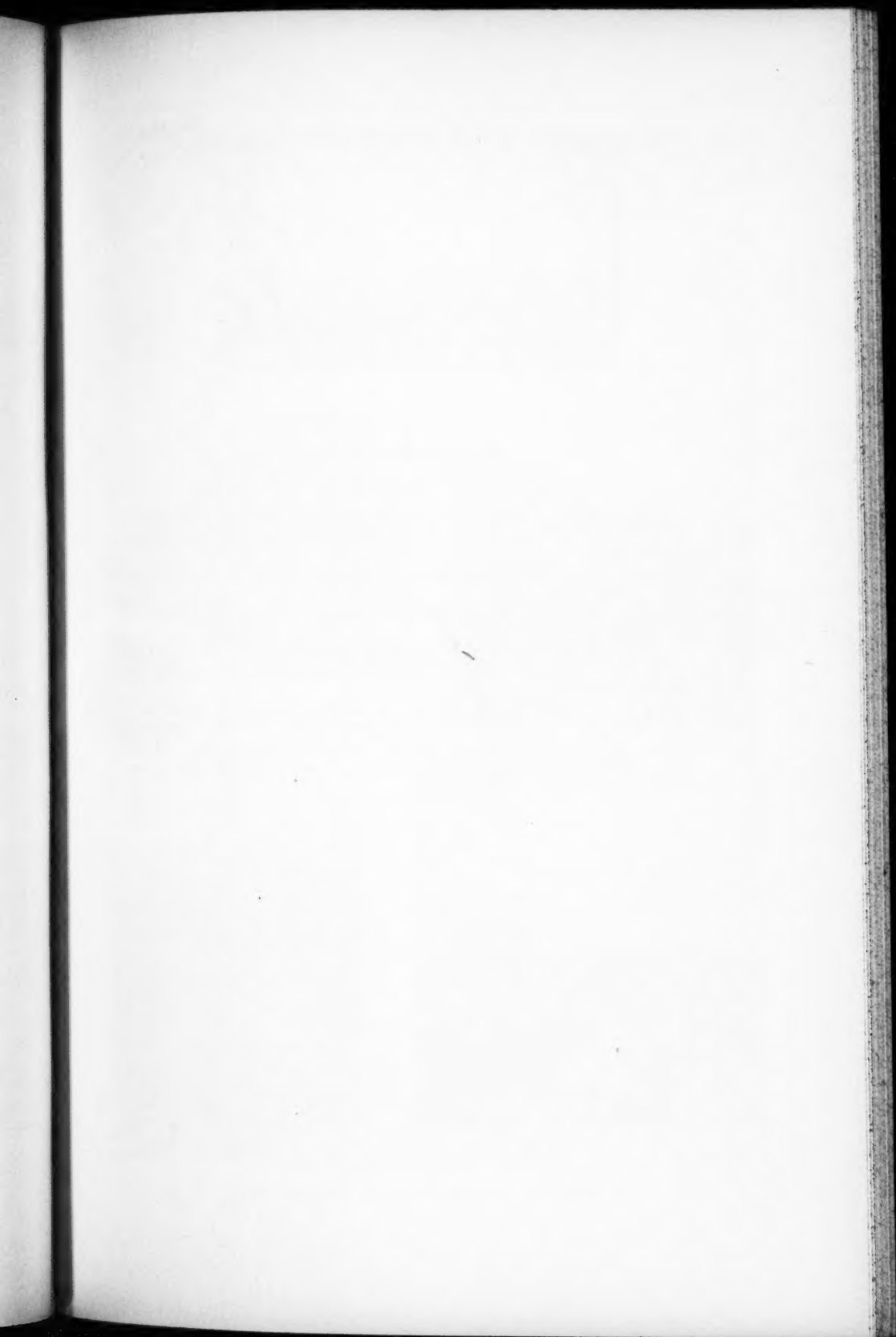
4



5

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## EXPLANATION OF PLATE

## PLATE 19

Fig. 1. Densely forested country typical of the Ozark region near the influence of streams, and showing accordant levels of hills carved by erosion from old peneplain, Shannon Co.

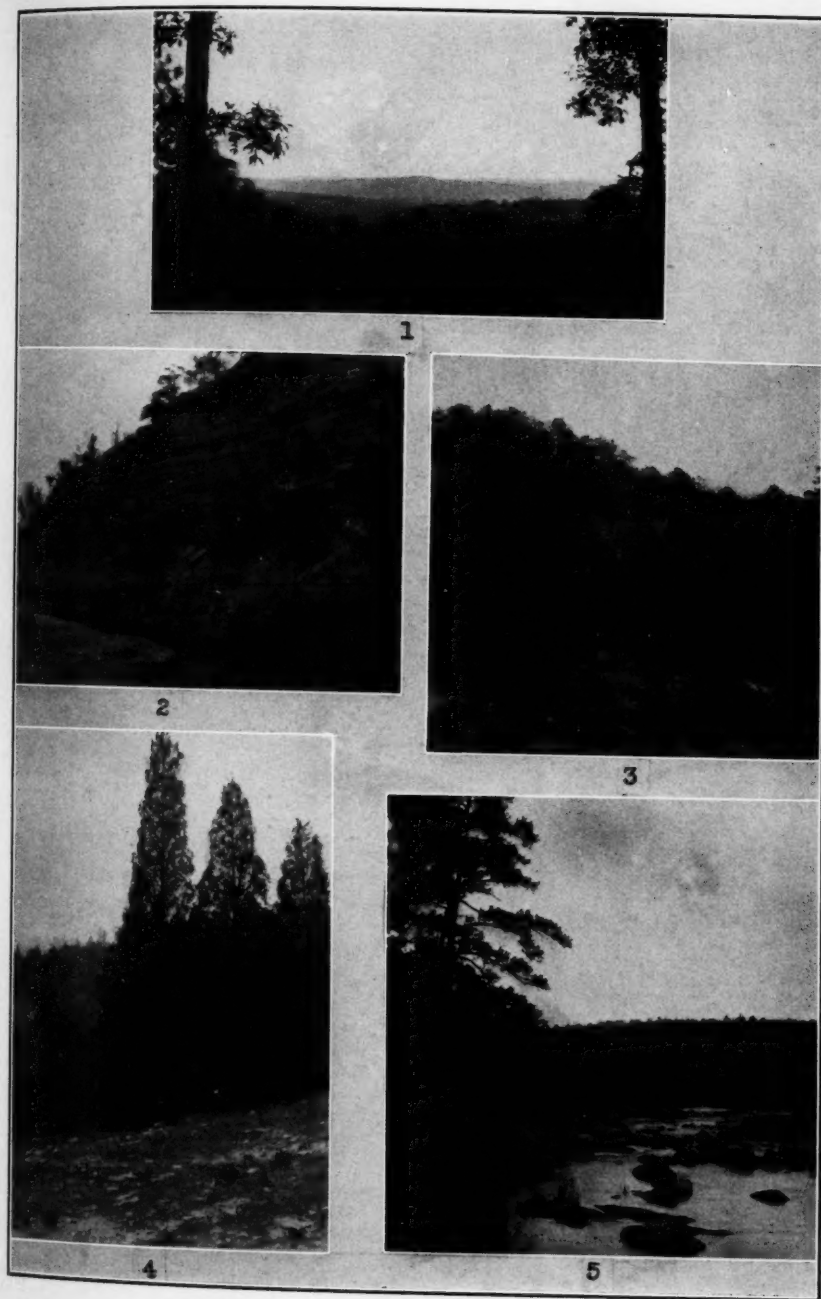
Fig. 2. Butler Bluff, McDonald Co., locality for *Cheilanthes alabamensis* and other southwestern species.

Fig. 3. Porphyritic trachyte bluffs of "shut-in" near mouth of Little St. Francis River, Madison Co.

Fig. 4. Limestone glade (Joachim limestone), Jefferson Co., with typical development of *Juniperus virginiana* in background and clumps of *Clematis Fremontii* on exposed portions.

Fig. 5. "Shut-in" along Little St. Francis River, Madison Co., typical of the Iron Mountain area of igneous rocks in the eastern Ozark region where a number of eastern and Appalachian species, such as *Hamamelis virginiana*, *Ilex verticillata* var. *padifolia*, *Rhododendron nudiflorum* var. *roseum*, and *Pedicularis lanceolata*, are found.





PALMER & STEYERMARK—PLANTS OF MISSOURI

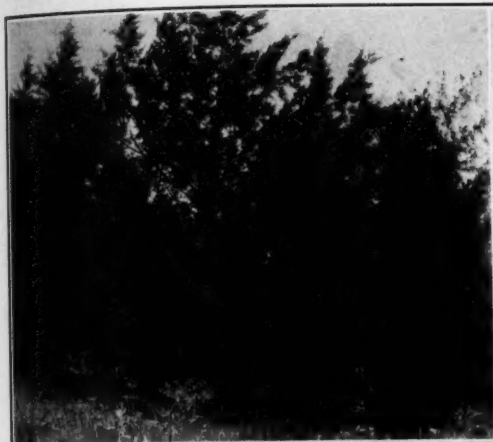




## EXPLANATION OF PLATE

## PLATE 20

- Fig. 1. *Juniperus mexicana*, on bald knobs along White River, Barry Co.  
Fig. 2. *Fagus grandifolia* var. *caroliniana*, in low woods, Butler Co.  
Fig. 3. *Taxodium distichum*, in swampy woods, Mississippi Co.  
Fig. 4. *Pinus echinata*, Shannon Co.  
Fig. 5. *Amelanchier canadensis* (large tree form), Schuyler Co.



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PALMER & STEYERMARK—PLANTS OF MISSOURI



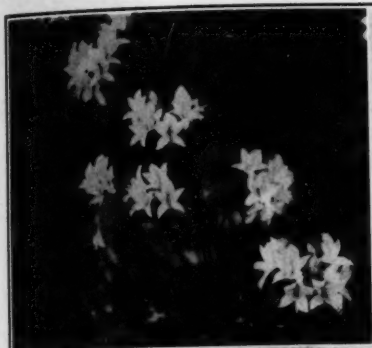




## EXPLANATION OF PLATE

## PLATE 21

- Fig. 1. *Rhododendron nudiflorum* var. *roseum*, on wooded granitic slope, Madison Co., southeastern Ozark region.  
Fig. 2. *Pentstemon Cobaea* var. *purpureus*, on bald knobs, Taney Co.  
Fig. 3. *Oenothera missouriensis*, on bald knobs, Barry Co.  
Fig. 4. *Erigeron pulchellus*, in open woods, Jefferson Co.  
Fig. 5. *Clematis Fremontii*, in limestone glade, Jefferson Co.  
Fig. 6. *Sedum pulchellum*, in limestone glade, Jasper Co.



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